

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 804.—Vol. XXI.]

LONDON, SATURDAY, JANUARY 18, 1851.

[PRICE 6D.]

TO RAILWAY COMPANIES, ENGINE BUILDERS, &c.
—TO BE SOLD, SIX LOCOMOTIVE TENDERS, to contain 1500 gallons each, with six wrought-iron wheels, 3 feet 6 inches diameter, buffers and springs, and break-work to all the wheels; they are quite new, and may be had on extremely reasonable terms. The tenders and axles are of Bowling Iron.
Apply to Waddington's Trustees' Railway Foundry, Bradford, Yorkshire.

TO RAILWAY COMPANIES.—FOR SALE, BY PRIVATE CONTRACT, TWO NEW FIRST-CLASS LOCOMOTIVE ENGINES AND TENDERS, cylinders 15 inches diameter, strokes 20 inches, crank axle, inside cylinders, 16 inches from centre to centre of cylinders, to prevent oscillation; outside malleable iron framing.
TWO PAIRS OF 5½ feet DRIVING WHEELS, coupled.
ONE PAIR OF 4 feet BEARING WHEELS, in front—BOILER, 10 ft. long in the body, 13½ inch BRASS TUBES, COPPER FIRE-BOX, and STAYS.
TENDER, 1000 gallons, with large coals space, on three pairs of 3-foot malleable iron wheels, with double brakes.
We will be glad to treat with any company on liberal terms, and meet their wishes as to mode and manner of payments.—Applications to be addressed to
Quarry Field Engine-Works, Gateshead. JOHN COULTHARD & CO.

WHEEL BENNY MINE.—TO BE DISPOSED OF
BY PRIVATE CONTRACT, all that valuable MINING SETT, known by the name of WHEEL BENNY, situated in the parish of CALSTOCK, CORNWALL, together with the WATER-WHEEL, LIFTS, ZINC PIPES, and OTHER MATERIALS belonging to and on the mine.
This sett is very extensive, comprises part of the River Tamar, and is contiguous to Lamerhoe Wheal Maria, West Wheal Williams, and other promising mines, and is held under a lease from the Duchy of Cornwall for the term of 21 years, from the 1st January, 1846, at the moderate dues of 1-12th.
Upwards of £4000 has been expended by the present adventurers in sinking a shaft and driving adit and other levels, for the purpose of proving the mine, and which, according to the opinion of the agents, is still well worthy of a further trial.
For further particulars apply to the secretary, Mr. James Crofts, No. 4, King-street, Cheapside, London; or to the purser, Mr. F. Cleverton, solicitor, 1, Courtenay-street, Plymouth.—Dated January 9, 1851.

MINING SETT.—A MINING SETT in the EAST of CORN-
WALL, of which several practical Miners and a Geologist have given favourable and satisfactory reports, is ready to be GRANTED on the usual mining conditions to any respectable parties having capital at hand to work it.
FIVE WELL-DEFINED LODES have been traced through the sett, and the immediate outcrop to lay open the mine is estimated at a comparatively small amount.
Particulars may be obtained from Mr. Collins, solicitor, Okehampton, Devon, or Capt. John Penrose, of the Devon Great Western Mine, at Moretonhampstead, Devon.
* * * None need apply who have not the means at hand to go to work, and references as to respectability and responsibility will be required.

TO BE LET, in Lots, for MINING PURPOSES, in NORTH
WALES, for a term of 21 years, all that EXTENSIVE RANGE of METALLIFEROUS MOUNTAIN LANDS, part of the ABER HIRNANT ESTATE, within a few miles of the valuable Llanganog Lead Mines, the lode of which has been traced through the property, which is also intersected by various promising lodes, indicative of LEAD and COPPER—LIMESTONE abounds. The Crown claims have been redeemed.
Apply for particulars to Mr. W. Jones, Lion Hotel, Bala.

TO BE SOLD, the LEABROOK WORKS, upon the Birming-
ham Canal, at TIFTON, in the county of Stafford, consisting of a FORGE, HOOP, and SHEET MILL, driven by separate engines, of 50 and 30-horse power, with very extensive WAREHOUSES, WHARFS, and all necessary conveniences for carrying on a large trade. The above premises have recently had a considerable sum expended upon them, and are in excellent repair, and present a very favourable opportunity for any party wishing to embark in the Manufacturing of Tin-plates.
For further particulars apply to Mr. George Payton, Handsforth, near Birmingham.

TO BE LET, OR SOLD.—VALUABLE COAL-FIELD
FOR SALE, OR LEASING, at HEMINGFORD, near BARNESLEY.—THE SEAM is the BARNESLEY THICK BED, and is most advantageously situated, immediately adjacent to the Elsecar Branches of the Dearne and Dove Canal and the South Yorkshire Railway. The seam would be won at a comparatively small outlay of capital, and there is an unlimited demand for this coal in the London market (via the South Yorkshire and Great Northern Railways).
For further particulars and terms, &c., apply to Mr. T. D. Jeffcock, mining agent, No. 18, Bank-street, Sheffield.

TO BE LET, a QUARRY of excellent BUILDING STONE,
situated within 1½ mile of the Railway Station at MOLE.—Wm. Jones, of Black Brook, near Mole, will show the Quarry; and for particulars apply to Mr. Thos. Jenkins, Plas-y-ward, Ruthin.

EXTENSIVE IRON-WORKS AND MINERAL LEASES
FOR SALE, BY PRIVATE BARGAIN.—THE BLAIR IRON-WORKS, belonging to the AYRSHIRE IRON COMPANY, situated in the parish of DALRY and county of AYR, consisting of TWO BLOWING ENGINES, FIVE BLAST-FURNACES, FOUNDRY, PIT ENGINES, and other requisite utensils for the furnaces and working the minerals, all in working order, besides nearly TWO HUNDRED WORKMEN'S HOUSES. The extensive MINERAL FIELDS consist of BLACKBAND, IRONSTONE, COAL, LIMESTONE, and FIRE-CLAY, held under long leases, at moderate fixed rents and royalties, all in the immediate neighbourhood of the furnaces; and the works having a connection with the Ayrshire Railway, command great facilities for transit and shipping of the produce. There is a large STOCK of IRONSTONE on the ground, which may be had at a valuation, and considerable progress has been made in the
ERECTION OF MALLEABLE IRON-WORKS,
in connection with the furnaces, which may also be had.—The above are well worthy the attention of capitalists and parties in search of mineral fields.
For further information apply to Mr. Brown, 35, St. Vincent-place, Glasgow.

VALUABLE COAL-FIELDS TO LET, in the WISHAW
ESTATE, and county of LANARK, near the junction of the Caledonian and Clyde-dale Railways, and within 14 miles of Glasgow.—THESE COAL-FIELDS, which extend to about 850 acres, will BE LET, for such a term of years as may be agreed upon in ALLOTMENTS, averaging from 70 to 120 imperial acres each, or in larger fields, if adequate offers are made by a single party for more than one lot.
These allotments, which lie contiguous to the different going pits on the same estate, and bordering with the extensive coal and ironstone estates of Coltness, Cleland, Carfin, and Dalziel, and partly proven by the pits and borings on the Wishaw Estate itself, are calculated as consisting of the following SEAMS:—

	Ft. In.	Average Depth.
Ell Coal	10 0	30 fathoms.
Main and Pychabach	7 0	10 "
Splint	15 0	15 "
Virtue Well	2 6	25 "
Kiltongue	4 0	20 "
Drumgray	2 6	8 "
Total	30 0	108 fathoms.

These six seams, wherever they have been wrought, are found to be all very excellent workable coal, and the first three are presently worked on this estate, and well-known to be of the best quality; and the other three seams are found and worked in the next adjoining coal-fields of the other surrounding estates, and of excellent quality also; and the whole of these minerals will find ready markets by means of direct railway communication (the Caledonian Railway running through the centre of the estate) in the cities of Edinburgh and Glasgow, and towns of Leith, Perth, Dundee, Paisley, Greenock, Port-Glasgow, and the other towns and harbours on the Forth, Tay, and Clyde; and, in particular, as there are 79 blast-furnaces within 10 miles of the estate, a ready market can also be obtained at them.

The Estate of Wishaw embraces a surface of nearly 2000 acres, and as it marches with several estates (some of them already noticed), where abundance of black and rough, or clay-band, ironstones of the best quality are found and wrought. It is believed that the very best black-band ironstone, of at least 1 foot thick, and the best rough or clay-band ironstone, of about 9 inches thick, will be found throughout that part of the Wishaw Estate—the coal of which is now to be let; and in the meantime it may be stated, that bords and searches are now going on to ascertain and confirm the fact; and for these ironstones, either in large or small lots, like the coal, offers for leases will also be received.

To parties wishing to extend or commence the coal or iron trade, the present is a most desirable opening; either as regards the neighbouring coal or iron-works, or new ones which may be established; and the mines having little or no water to contend with, suitable fittings for the working of the coal and ironstone can be made upon any of these allotments at a very moderate cost.

For particulars apply to Mr. James Miller, factor on the Wishaw Estate, at Wishawtown, who will show plans and measurements of the areas of the different lots, and also sections of the going coal-works in the same or adjacent estates, and marching with those allotments and divisions now to be let, and furnish any other information.
Wishaw, Dec. 30, 1850.

IN THE MATTER OF THE JOINT-STOCK COMPANIES'
WINDING-UP ACTS, 1848 and 1849, and of the ASHBURTON UNITED MINES.
NOTICE IS HEREBY GIVEN, that a PETITION for the DISSOLUTION and WINDING-UP of the ABOVE-NAMED COMPANY, was on Thursday, the 9th day of January, 1851, presented to the Lord Chancellor in England by Joseph Maitland, and that it is expected such Petition will be HEARD before the Vice-Chancellor Sir James Lewis Knight Bruce on FRIDAY, the 24th day of January, 1851; and any person desirous to oppose the making of an Order Absolute for the Dissolution and Winding-up of the said Company under the said Acts, should appear at the time of hearing by himself, or his counsel for that purpose, and a copy of the petition will be furnished to any contributory of the said Company requiring the same by the undersigned, on payment of the regulated charge for the same.
W. B. JAMES, Solicitor for the Petitioner,
8, Basinghall-street, London.

MR. JAMES CROFTS, of 4, KING-STREET, CHEAPSIDE,
MINING BROKER, in renewing OFFERS of SERVICE to CAPITALISTS, feels much gratified at the extent of patronage and confidence he has received hitherto, and will continue so to treat the interests of his friends in town and country as to deserve a still more important share of their orders, whether for PURCHASING or SELLING MINING SHARES.—MR. CROFTS acts exclusively for PRINCIPALS, and will cheerfully give advice on contemplated investments, so far as his knowledge or judgment permits, either personally or by letter.
Numerous sound concerns may be safely invested in, exclusive of dividend mines, but the latter with a certainty, for some years, of 15 to 20 per cent. per annum interest.

MR. CROFTS HAS SPECIALLY FOR SALE—
Hencock (10 shares) Lamerhoe Wheal Maria (10 shares)
Tincroft (20 shares) Lewis (10 shares)
South Tamar (30 shares) Wellington (10 shares)
East Tamar (20 shares) West Alfred (20 shares)
Wheal Harris (50 shares) East Tolgus (5 shares)
Wheal Tremar (4 shares) Wheal Vincent (45 shares)
Nap Down Consols (30 shares) Warrigean Consols (10 shares)
Snowdon (40 shares) Annato Bay (10 shares)
MR. CROFTS issues a PRICE CURRENT of Mining Shares twice each week, which may be had on application.—Dated 4, King-street, Cheapside, Jan. 17, 1851.

MR. EVAN HOPKINS, C.E., F.G.S., &c., CONSULTING
MINING ENGINEER,
OFFICE, No. 13, AUSTINFRIARS, LONDON.
MR. HOPKINS may be consulted daily by Noblemen, Gentlemen, and Capitalists, who have invested, or may wish to invest, their capital in MINES or MINERAL PROPERTIES, on all matters connected therewith (Home and Foreign).
This is the only one of the kind in the kingdom. No dealings in shares—is independent—having no connection with any party.
To avoid abuses, it is requested that no notice will be taken of any representations respecting mines—be they favourable or unfavourable—without being authenticated.
The object is to see justice done to the capitalists and property, and consultations on questions connected with general science.
* * * Every description of Mineral Property inspected and reported on—on the Continent as well as the United Kingdom, and distant capitalists may receive periodical advice.
N.B.—Being a responsible and confidential business, and having a very extensive connection, it becomes necessary to acquaint those who apply for reports, that they must be paid for on delivery, at his office, otherwise they cannot be attended to.

MR. J. C. NESBIT, F.G.S., F.C.S., CONSULTING AND
ANALYTICAL CHEMIST,
LABORATORIES—35, KENNINGTON-LANE, LONDON.
MR. NESBIT gives PRIVATE INSTRUCTIONS in CHEMICAL ANALYSIS, and may be consulted on subjects connected with the Composition, Working, or Assaying of Minerals.—Analyses of Minerals, Slags, Soils, Manures, &c., &c., performed as usual, on moderate terms.

MR. JAMES STRIDE, formerly of the firm of Bulmer & Stride,
Parliamentary Agents, and late of Spring Gardens, MINING SHARE DEALER and AGENT, begs to state that he now TRANSACTS MINING BUSINESS at the
AMALGA COFFEE-HOUSE, CORNHILL, LONDON.
Considering the improving value of Mining Property, and the consequent increasing demand for Shares, Mr. Stride deems the present time favourable for offering his advice in respect to that description of property.

MINING, RAILWAY, AND AUCTION OFFICES,
52, THREADNEEDLE-STREET, LONDON.
Messrs. R. TREDINNICK & CO., in thanking their friends and the public for their patronage at the Sale of Mining and Railway Shares, on Wednesday last, hope, by strict attention to the interest of all parties, to receive a continuance of their support.
The NEXT SALE will be HELD on WEDNESDAY NEXT, the 22d day of January, 1851, and continued weekly.
Messrs. TREDINNICK & CO. request that all ORDERS of SHARES FOR SALE be FORWARDED to them not later than MONDAY, the 20th inst., so as to allow their insertion in the catalogues, issued on the day preceding their sale.

CHEMICAL ANALYSIS, &c.—ANALYSIS AND ASSAYS,
or INVESTIGATIONS of ANY KIND, are UNDERTAKEN at the COLLEGE OF CHEMISTRY, LIVERPOOL.
Professor—DR. SHERIDAN MURPHY, F.R.S.E.
Hon. Assistant—MR. JOSEPH DANSON, F.C.S.
A list of Fees for Analysis, and for Students working in the Laboratory, may be obtained by writing to Dr. Murphy, College of Chemistry, Liverpool.

MINING COMPANY OF WALES.—PROSPECTUSES,
containing REPORTS on the MINES and QUARRIES of the COMPANY, Terms and Conditions for its Government, &c., may be had of ST. PIERRE FOLEY, Secretary, to whom letters on the allotment of shares, and on the general business of the Company are to be addressed.—Offices, 24, Lincoln's Inn-fields, London.

NOTICE.—THE CHIEF PROPRIETORS of the
ROCKS and TREVEBURY UNITED TIN MINES, GREAT WHEAL BADDERN TIN AND LEAD, PENDARVES and ST. AUBYN CONSOLS TIN AND COPPER, and UNITY CONSOLS TIN AND COPPER, in the county of CORNWALL, Having their OFFICE at No. 5, KING-STREET, MANCHESTER, beg leave to acquaint the Public, that they have
OPENED OFFICES at No. 55, OLD BROAD-STREET, LONDON.
For the purpose of FORMING a METROPOLITAN CONNECTION with SELECT PARTIES, who alone will be received.
For particulars apply to
No. 55, Old Broad-street, City.—January 16, 1851. W. W. TERRINGTON, Secretary.

BOTTLE HILL TIN AND COPPER MINE,
PLYMOUTH ST. MARY, NEAR PLYMOUTH, DEVON.
5250 sepia shares, of £1 each—all paid up; no further liability.
For the REMAINING SHARES applications to be made to Mr. T. Urelli, No. 75, Old Broad-street, on or before the 18th inst. (THIS DAY), when the distribution will be made.—Any particulars respecting this mine will be furnished at the offices, No. 3, Walbrook-buildings.

THE BRITISH ELECTRIC TELEGRAPH COMPANY.
(Incorporated by 13 and 14 Victoria, cap. 86.)
Share capital authorised to be raised by the Act, 4000 shares, of £25 each.
Deposit £2 10s. per share.
CENTRAL OFFICES—ROYAL EXCHANGE, LONDON.
DIRECTORS.
JAMES SIMPSON, Esq., C.E., and V.P. Inst. Civ. Eng., Chairman.
J. C. COBOLD, Esq., M.P. E. HIGHTON, Esq., C.E.
W. GILBERTSON, Esq. W. W. FEARSON, Esq., M.A.
A. HENDERSON, Esq. G. G. SCOTT, Esq.
E. HIGHTON, Esq., Sen. T. WEBSTER, Esq., M.A., F.R.S.

SECRETARY—MR. GEORGE SAWARD.
BANKERS—Messrs. Barnett, Hoares, & Co., London; the Bank of Ireland, Dublin; the Belfast Banking Company, Belfast.
SOLICITORS.
England—Messrs. Bell, Steward, and Lloyd, 59, Lincoln's Inn-fields.
Ireland—A. J. Macarty, Esq., 45, Rutland-square, Dublin, and Duncarn, Belfast.
BROKERS—Messrs. Mullens, Marshall, and Daniell, London.

The above Company possesses the most recent improvements in Electric Telegraphs, and at the same time is free from the burden of unproductive capital.
In America, where the monopolising effects of a single company do not prevail, the Telegraphic System has made gigantic strides, and, whilst largely benefiting the public, has handsomely remunerated the proprietors.

The British Company proposes to assimilate its charges to the American Tariff, and thus to call into existence the use of the Telegraph to an extent hitherto (owing to the heavy charges in this country) not contemplated by the public.
Considerable revenue will also arise from the sale of licenses, and from the application of the Telegraph to Gas and Water-Works, Fire and Police Establishments, Mines, Docks, &c.—The Act was obtained last session, when petitions in its favour were presented from nearly every important place in Great Britain.

The British Electric Telegraph Company is making arrangements with various Railway Companies for laying Wires to the most important towns in England, Scotland, and Ireland, and is in a position at once to commence active operations.
Applications for shares may be made to the solicitors; to the secretary; or to the Company's brokers, Messrs. Mullens, Marshall, and Daniell, Lombard-street, London.
Central Offices, London, January 10, 1851.

STEAM TO INDIA AND CHINA, via EGYPT.—Regular
MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.
THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of the month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 29th of the month to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.
MEDITERRANEAN.—MALTA—On the 20th and 29th of every month. CONSTANTINOPLE—On the 29th of the month. ALEXANDRIA—On the 20th of the month.
SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.
For plans of the vessels, rates of passage-money, and to secure passages and ship cargo, apply at the company's offices, No. 123, Leadenhall-street, London; and Oriental-place, Southampton.

TO SURVEYORS AND MINING ENGINEERS.
—A YOUNG MAN, fully conversant with the above profession, is desirous of obtaining a PERMANENT SITUATION, having been for some time employed in an Iron District. The fullest references as to character and ability can be given.—Apply by letter to "A. B.," at Mr. William Insull's, bookseller, Store-street, Dudley.

TO CHAINMAKERS.—THE COMMITTEE of the REGENT'S
CANAL COMPANY are ready to RECEIVE TENDERS for the SUPPLY of ONE THOUSAND TWO HUNDRED LINEAL YARDS of ELEVEN-SIXTEENTHS BEST ATTESTED, CLOSE, SHORT-LINKED CHAIN, at the City-road Basin.
Tenders to be delivered at this office, not later than Twelve o'clock, on the 29th inst.
EDMUND L. SNEE, Secretary.
Regent's Canal Office, City-road Basin, January 16, 1851.

TO PIPE-FOUNDERS.—THE TOWN COUNCIL OF
LIVERPOOL are desirous to RECEIVE TENDERS for a SUPPLY of about ONE and THREE-QUARTERS MILE of CAST-IRON PIPES, of 40 inches and 36 inches diameter.—Specifications and other information may be obtained on application at the Town Clerk's Office, Liverpool; and Tenders must be delivered, in manner prescribed by the specifications, on or before Friday, the 31st day of January inst.
WM. SHUTTLEWORTH, Town Clerk.
Town Hall, Liverpool, Jan. 13, 1851.

WATER PIPES.—THE DIRECTORS of the LEICESTER
WATER-WORKS are desirous to RECEIVE TENDERS for about FORTY MILES of CAST-IRON SOCKET and OTHER PIPES, from 26 inches diameter to 1½ inch diameter.—Applications for specifications and other information may be made to Mr. Hawksley, engineer, Nottingham, or at my office, in Leicester.
By order, JOHN LOSEBY, Solicitor,
Leicester, January 13, 1851. Secretary to the Company.

WATER-WHEEL WANTED.—WANTED, a WATER-
WHEEL, 40 feet by 4 feet, with Iron Axle and best Norway Timber—in every respect substantially made.—Tenders, stating full particulars of price of the Wheel and its appendages, and in what time it may be erected and in work from the date of order, to be addressed to the "Secretary of the North Wheal Robert Mining Company," No. 39, St. Helen's-place, London, on or before the 22d inst.—January 9, 1851.

WANTED.—A respectable PARTY to undertake the PRAC-
TICAL MANAGEMENT of an IRON WORK in one of the English counties; he must be fully competent to conduct the whole work, from the mouth of the pit to the finished bar, hoop, or sheet-iron. Satisfactory references will be required.—Address (pre-paid) "J. S.," at the office of the Mining Journal, 26, Fleet-street, London.

EAST WHEAL JOSIAH MINE, TAVISTOCK.—
WANTED, FIFTY SHARES in this MINE, in one or more lots, to complete a transaction.—Apply immediately, by post-paid letter, to Richard Robins, Esq., solicitor, Tavistock, stating the number and lowest price at which they can be offered.
Dated Tavistock, January 15, 1851.

STEAM-ENGINE.—FOR SALE, a capital double cylinder
HIGH-PRESSURE and CONDENSING STEAM-ENGINE, of 30-horse power, of beam construction, well fitted, and in excellent condition. Also, the RAILING, STEPS, and IRON FITTINGS, in connection for the engine-house; with TWO CAST-IRON HIGH-PRESSURE BOILERS, 30-horse power each, with tubes under, furnace fittings, and all appurtenances complete. The whole is taken down, ready for removal.
Apply to Messrs. Haden, engineers, Trowbridge, Wiltshire.

TO FOREIGN CAPITALISTS OR OTHERS.—TO BE
DISPOSED OF, a very VALUABLE PATENT FOR FRANCE, and also ONE FOR BELGIUM, both taken out in the year 1848, for an Invention for which Letters Patent had previously been granted for Great Britain and Scotland, and which is now in successful operation in many of the large mining districts. The price at which the above would be sold will yield a very large return upon the purchase-money.
Full particulars may be obtained by addressing a letter (pre-paid) to "L. M.," at the office of the Mining Journal, 26, Fleet-street, London.

WHEAL ARTHUR MINE.—Offices, 5, White Hart-court,
Lombard-street.—In consequence of the FAVOURABLE REPORTS from the Captain, it was Resolved, at a Meeting of the Committee, held on the 17th inst.:—That a SPECIAL GENERAL MEETING of the shareholders be convened for FRIDAY, the 24th inst., at Twelve o'clock at noon, for the purpose of taking into consideration the expediency of closing the share list, and on other important business.
For the Report, refer to the "Mining Intelligence," in this day's Mining Journal.
W. FENTON, Secretary.

TO MINE ADVENTURERS AND OTHER CAPITALISTS.
MR. JOHN EARLE, MINE AGENT, MINE AND SHARE BROKER.—OFFICES, 57, FORD-STREET, and MORETON COTTAGE, REDRUTH, CORNWALL (will be in attendance at the QUEEN'S HOTEL, ST. MARTIN'S-LE-GRAND, LONDON, on Monday the 13th, Tuesday the 14th, and Wednesday the 15th inst.—Hours of business from Eleven till Three o'clock).
References given of the highest respectability in London and Cornwall.

MINES INSPECTED.
WANTED.—A SECOND-HAND STEAM-ENGINE, 40-in. cylin., boilers, &c., complete.

MR. W. BIRDSEY, MINING AGENT, begs to acquaint his
Friends and the Public, that he has REMOVED to No. 1, ST. MICHAEL'S-ALLEY, CORNHILL, and takes this opportunity to thank them for the favours he has hitherto received. From an extensive experience in MINING PROPERTY, in which he has been engaged upwards of 25 years, Mr. Birdsey flatters himself he will be enabled to give much general information—he having personally visited most of the mines in Cornwall.—MR. BIRDSEY trusts, by strict attention to the interests of those who may honour him with their confidence, to merit a continuance of their orders.

MR. WILLIAM RAMSDEN, MINING ENGINEER, begs
to announce, that he still undertakes to INSPECT and SURVEY ESTATES, COLLIERIES, IRON, COPPER, and LEAD MINES.—Accurate SURVEYS made and PLANS neatly executed, on the shortest notice and reasonable terms.
Greenfield, near Holywell, January 16, 1851.

MR. JOHN DAVIES, MINING SHAREBROKER,
No. 38, TOWER-BUILDINGS, TOWER-GARDEN, LIVERPOOL.

MESSRS. BOXALL & CO., MINING SHARE DEALERS,
5, CROSBY HALL CHAMBERS, BISHOPSGATE-STREET.

CAMERON'S COALBROOK STEAM COAL & SWANSEA
AND LOUGHOR RAILWAY COMPANY.—Notice is hereby given, that the next ORDINARY MEETING of the shareholders of this Company will be HELD at the Company's offices, 2, Moorgate-street, London, on Thursday, the 30th day of January inst., at One o'clock in the afternoon precisely, in pursuance of the provisions of the Act of Parliament relative thereto, for the purpose of receiving the Report of the Directors with reference to the Company's Railway.
By order of the Board of Directors,
2, Moorgate-street, London, Jan. 10, 1851. A. C. HOWDEN, Secretary.

CONSOLIDATED COPPER MINES OF COBRE ASSO-
CIATION.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of this Association will be HELD, in conformity with the Deed of Settlement, at the office of the Company, 26, Austinfriars, on Tuesday, the 28th day of January inst., at One o'clock precisely. On that day two directors—viz., Sir John Prie, Bart., and George Whitmore, Esq.; and one auditor, Francis Mills, Esq.—will go out of office by rotation, agreeably to the Deed of Settlement, but are immediately re-eligible, and are candidates for re-election.
It is necessary that persons intending to offer themselves as Candidates for the Direction and Auditorship should leave Notice of such their intention with the Secretary, at the office of the Company, No. 26, Austinfriars, at least 14 clear days before the day of election.
By order of the Court of Directors,
26, Austinfriars, January 10, 1851. WM. LECKIE, Secretary.

HOLYFORD COPPER MINING ASSOCIATION.—THE
HALF-YEARLY GENERAL MEETING of the shareholders of this Association will be HELD at the office, 34, Great Winchester-street, on Wednesday, the 29th January inst., at Twelve o'clock, for the Election of Directors, in place of Frederick Le Mesurier, Charles Hunt, and Edward Henley; and auditors, in place of Arthur Hunt and William Brook—whose term of office then expires; and for the ordinary business of the Association.—And Notice is hereby given, that Mr. William Henry La Sere will, at this meeting, be proposed as a candidate for the office of Director of this Company.
London, January 15, 1851. J. W. BUCKLAND, Jun., Secretary.

LINARES MINING ASSOCIATION.—Notice is hereby
given, that the HALF-YEARLY INTEREST, due the 15th inst., on the Preference Shares in this Association, will be PAID at this office, on and after Thursday, the 16th inst., between the hours of Eleven and Three o'clock.
G. EATON, Secretary,
2, New Broad-street, January 8, 1851.

UNITED MEXICAN MINING ASSOCIATION.—Notice
is hereby given, that the HALF-YEARLY GENERAL MEETING of proprietors of this Association will be HELD at the office of the Company, No. 8, Finsbury-circus, on Wednesday, the 29th of January next, at One o'clock precisely.
The transfer books will be closed on the evening of the 11th, and re-opened on the 30th of January.
By order of a Court of Directors, JOHN KATHIER, Sec.
Office, 8, Finsbury-circus, London, Dec. 28, 1850.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Asiatic—5, New Burlington-street.....	2 P.M.
MONDAY	Royal Botanic—Inner Circle, Regent's-park.....	3½ P.M.
	Statistical, 12, St. James's-square.....	8 P.M.
	Chemical—142, Strand.....	8 P.M.
TUESDAY	Linnean—Soho-square.....	8 P.M.
	Civil Engineers—25, Great George-street.....	8 P.M.
	Zoological—11, Hanover-square.....	9 P.M.
WEDNESDAY	Society of Arts—Adelphi.....	8 P.M.
	Geological—Somerset-house.....	8½ P.M.
THURSDAY	Royal—Somerset-house.....	8½ P.M.
	Antiquaries—Somerset-house.....	8 P.M.
	Royal Society of Literature—4, St. Martin's-place.....	4 P.M.
FRIDAY	Royal Institution—Albemarle-street.....	8 P.M.
	Philological—London Library, 12, St. James's-square.....	8 P.M.
SATURDAY	Medical—33, George-street, Hanover-square.....	8 P.M.

GEOLOGICAL SOCIETY.

January 8.—Sir CHARLES LYELL (president), in the chair.

Colonel Helmsen, Prof. Haidinger, Prof. H. G. Bronn, and J. Dana, Esq., were elected foreign members.

The following communications were read:—

1. On the Volcanic and Tertiary Strata in the Isle of Mull. By his Grace the Duke of ARGYLL, F.G.S.

A general outline of the topographical and mineralogical character of the southern portion of the Isle of Mull having been premised, a detailed account of Ardtun Head, with its trap rocks and leaf-beds, was given. This headland, which divides Loch Scriden from Loch Laigh, was described by the author as being about 130 feet in height, and consisting of (in descending order)—1. Basalt, rudely columnar, 40 feet.—2. A seam of shale, 2 feet, bearing impressions of leaves and stems of plants.—3. A bed of volcanic ash, or tuff, enclosing chalk-flints, 20 feet.—4. A shale, 2½ feet, rich in impressions of leaves.—5. A second band of tuff, 7 feet.—6. A third leaf-bed, 1½ ft.—7. Amorphous basalt, 48 ft., passing into columnar basalt, that rises 10 feet above the level of low water. A ravine on the face of the cliff is the only point at which the strata are sufficiently accessible to be examined in detail; and here the beds containing the vegetable impressions are seen to dip gently towards the south, and his Grace suggested that certain coal seams, outcropping near the head of Loch Laigh, may possibly be the continuation of one or other of these leaf-beds; and if so, affording an interesting instance of the passage of nearly unaltered vegetable matter into the highly altered mineral—coal. The above-mentioned shales contain leaves of the tertiary age, which belong to extinct species of existing dicotyledonous families—viz., the plane, buckthorn, &c., and which necessarily afford a clue to the age of the accompanying lavas; leaves also of coniferous trees and ferns, and the equisetum, are present. The occurrence of the last-named plant tends to prove the former existence of marshy land at this particular locality, in the still waters of which the leaves of some aquatic forest fell autumn after autumn, and where they were accumulated in mud beds one above another, fully expanded, whole, and unruined. No branches or trunks of trees occur in these deposits. The author then proceeded to point out that the district in which these accumulations of leaves had taken place had been twice covered by mud and ashes, probably thrown out by a volcano, situated at no great distance; that after each of these eruptions of volcanic matter, the marshy hollow in which the leaves had been deposited continued to be sufficiently unchanged in character to receive similar deposits of autumnal leaves for long intervals; but the third eruption must have been of a different kind; sheets of lava having been now poured forth, and the configuration of the country altogether changed. The conclusion of the paper comprised remarks on the probable site of the active volcanoes, and the extensive forests that supplied respectively the leaves and the lavas of the Ardtun beds; and in connection with this part of the subject, reference was made to, and descriptions given of, the basalt and accompanying lignite beds of the coast of Antrim.

2. On the Estuary Beds underlying the Oxford Clay, in the Isle of Skye. By Professor E. FORBES, V.P.G.S.—The northern cliffs of the peninsula of Trotternish, in the Isle of Skye, were described in this paper as being composed of imperfectly columnar trap, resting on oolitic sandstones, limestones, and shales, the uppermost of which are the equivalents of the cornbrash and forest-marble. Beneath these are unquestionable representatives of the middle and inferior oolitic strata, and at the base of all undoubted lias. All these secondary rocks, the author observed, will some day afford a rich harvest of undescribed forms of invertebrata to the naturalist who explores them. Through the oolitic strata are seen dykes of greenstone in communication with the spread of trap above; and other trap-dykes are visible, which not only burst through the greenstone, but also through the sheet of trap capping the cliff. The strata of the cliffs dip southwards at a considerable angle, and a little way behind them rise lofty hills of amygdaloidal and zeolitic trap—the broken escarpments of which form isolated blocks and pinnacles, constituting the magnificent rock-scenery of the Storr. Beneath this amygdaloidal trap, and resting on the columnar trap, before-mentioned as capping the cornbrash oolite, occur beds of soft shale and crumbling limestone, which Professor E. Forbes identifies—the former and upper as true Oxford clay, and the latter as the equivalent of the estuary beds of the Brora oolite of the eastern coast of North Britain. Of all the fossil shells, however, obtained from the estuary deposits, it is remarkable that one only (a *Hydrobia*) appears to be common to the two contemporaneous formations. The author further drew attention to the fact, that the columnar basalt of Trotternish has its geological date marked to a nicety, having overflowed the strata of the middle oolitic series, and having been again covered by the beds of the upper oolite; and, further, that at the termination of the deposition of the middle oolitic strata, we have indications of most important changes, and of the conversion of the bed of the Hebridean oolitic sea into an estuarine and terrestrial area, which, after a considerable lapse of time, became submerged under oceanic conditions, and had a new series of marine strata deposited upon it.

* Papers to be read Jan. 22.—1. "On the Superficial Accumulations of the Coasts of the English Channel, and the Changes they indicate," by R. A. C. Austin, Esq., F.G.S.—2. "On certain Greensand Corals," by W. Lonsdale, Esq., F.G.S.

INSTITUTION OF CIVIL ENGINEERS.

JANUARY 14.—WILLIAM CUBITT, Esq. (president), in the chair.

The paper read was "On the Construction of the Building for the Exhibition of the Works of Industry of all Nations, in 1851," by Mr. M. D. Wyatt, Assoc. Inst. C.E.

The paper, which was unavoidably of very considerable length, commenced by characterizing the first attempt to concentrate within the compass of a few acres, specimens of the productive industry of all nations, as a "great experiment," worthy of being tried upon a scale commensurate with the energy of the industrial resources of this country. The success of this experiment must depend on a just apprehension of the results to be produced; a well-digested scheme for producing the results aimed at; and power and dexterity to arrange the whole, so as to insure the accordance and working of all its parts in the simplest and best manner. The subject then naturally divided itself into the consideration of the requisites demanded—the design, and the actual construction of the building.

The features of all the buildings in which previous exhibitions had been held, both abroad and at home, were then carefully reviewed, and the points of difference between the present cosmopolitan exhibition and all its predecessors, were distinctly enunciated, and shown to have induced the invitation to the world at large, to contribute their suggestions for the building, the results of which were shown to the public in the Theatre of the Institution of Civil Engineers, in the 240 plans there exhibited. None of these plans being found to embrace the necessary requisites, the Royal Commissioners devised a plan, for the execution of which tenders were invited in June, 1850. The reservation having been made, that *bona fide* tenders for any construction, offering greater advantages than that proposed by the Commissioners, would be considered, Mr. Paxton brought forward his proposition; and it being contended, that certain advantages in celerity of construction, facility of removal, the adaptability of the materials to the required forms, and the amount of cost, were inherent in the design for the proposed structure, to be entirely composed of wood, iron, and glass, the other tenders were rejected, and that of Messrs. Fox, Henderson, and Co., for Mr. Paxton's design, was accepted.

Such was the origin of the present building, which being adapted to the site selected for it, in Hyde Park, by H.R.H. Prince Albert, was shown to consist of a nave 72 ft. wide, and 64 ft. high, with a series of side aisles, two of 48 ft. and six of 24 ft. wide, of the respective heights of 43 feet and 23 feet; the whole spreading to a width of 436 feet. A transept, 408 feet long and 72 feet wide, intersected the building at right angles in the centre; this transept was covered with a semi-circular roof, springing at a height of 64 ft. from the level of the ground, and making the entire height 100 feet.

The details of the construction were very minutely given, from the concrete filling of the holes in the ground, under each support, through the base plate, the columns, 8 in. in diameter, the connecting pieces, to which were attached the girders for the galleries, the second and third sets of columns and the roof trusses, the box gutters and the "Paxton" gutters, which latter were intended to provide at the same time for conveying away the rain from the roof, and the condensed moisture from the inside. The total area of the ground floor was equal to 772,784 square feet, and that of the galleries to 217,100 square feet.

Details were also given of the mode of conveying the rain water, &c., into the adjoining sewers, through the interior of the supporting columns; of the ventilation by means of sets of louvers, of galvanised cast-iron, placed between the columns of the side aisles, and in the upper part of the roof; of the supply of water for the extinction of fire, and for the supply of the fountains; and of the experiments for testing the girders and trusses, by the hydraulic press erected in the building, and by which the strength of the whole was proved before they were used.

In examining the power and dexterity with which the design had been realised by Messrs. Fox, Henderson, and Co.—or, in other words, in the actual construction of the building—it was necessary to bear in mind, that their tender was only verbally accepted on the 26th July, 1850, that possession of the site was obtained on 30th July, that the first column was fixed on the 26th Sept., and at the present time (only 145 working days since the commencement) but little of the vast building remained to be finished. To give an idea of the vast size of this building, it was noticed, that the width of the main avenue was within 10 feet double that of the nave of St. Paul's Cathedral, whilst its length was more than four times as great. The walls of St. Paul's were 14 feet thick, those of the glass building in Hyde Park were only 8 in. St. Paul's occupied 35 years in building, whilst the Hyde Park building would be finished in less than half that number of weeks. The celerity of the construction was very remarkable. As many as 308 girders had been delivered on the ground in one week. Seven of the great trusses of the nave were raised in one day. Each man fixed about 200 superficial feet of glass per day. In order to perform this work, it was necessary to devise and employ various contrivances for economising labour; such as the sash-bar machine, the gutter machine, the morticing machine, the painting machine, the glazing machine, besides many others of an equally ingenious nature—all of which were described; and, when listening to the details, it was universally felt that England possessed mechanical and physical energies far exceeding those which gave form and being to the most celebrated monuments of antiquity.

In the course of the paper, Mr. Digby Wyatt (the author), to whom, from the commencement, had been entrusted the active superintendence of the construction of the building, paid a well-merited tribute of praise to Mr. C. H. Wild and Mr. Owen Jones, who had been associated with him; to Mr. Barry and Mr. Brunel, who as members of the Building Committee, had made very valuable suggestions; as well as to Messrs. Fox and Henderson, and to Mr. Brounger, Mr. J. Cochrane, and others, for their exertions in the execution of the construction; and he concluded by reminding the members, that the weight of responsibility, the arduous duty of supervision, the honour of acting as the master mind, to weigh the requisites, to determine the design, and to govern the construction of this great apparatus, had been reserved for Mr. Cubitt, the president of the Institution of Civil Engineers.

[The discussion on the paper will take place at the meeting of Tuesday next.]

IMPROVEMENTS IN RAILWAYS.

To all inquiring minds, it has long been evident that a wide field was open for improvements in the mechanical operation of our railway machinery, and these evidences are painfully substantiated by the frightful—often fatal—collisions which are continually recorded in the daily press. Among the inventions every week patented, we find one or more for improvements in the details of locomotive machinery; still accidents occur—still collisions take place—which, by other systems, might be avoided; and it is probable the time is not very far distant when the scientific world will be convinced that a less dangerous, less costly, but equally efficacious and rapid, plan may be introduced, and advantageously supersede the locomotive altogether. No less than three patents have been taken out during the past week for railway improvements, which we now proceed to notice from the specifications:—

SLIDE VALVES.—Francis Edward Colegrave, of Brighton, for improvements in slide valves, in causing the driving wheels of locomotives to bite the rails, and in supplying water to steam-boilers. In working the slide valves of steam-engines, according to the methods at present in use, a large amount of power is expended in overcoming the steam pressure at the back—in locomotives amounting often to 100 lbs. on the square inch. Mr. Colegrave proposes to obviate this disadvantage, by screwing on the face of the cylinder, in which are the steam ports, four studs, at a sufficient distance apart to admit of the free working of the slide valve in the usual manner. On the projecting ends of the studs are screwed four nuts, the upper surfaces of which are truly faced, and come flush on the back of the valve; a plate of iron is then placed over the back of the valve, supported by the nuts, in such manner that the valve traverses backwards and forwards between the face of the cylinder and the fixed plate, which receives the whole pressure of the steam. The valve is constructed with a moveable plate at the back, instead of being solid, which plate can be renewed when worn down by the continued friction.

For causing the wheels to bite the rails, the patentee proposes to convey a stream of heated air against the rails, immediately in front of the driving-wheels, which, in damp and slippery weather, would be almost instantaneously dried; and also to connect together by a band the leading, driving, and trailing wheels, securing cohesion between the wheels and rails. The patentee also proposes to heat the water before it is conveyed to the boiler, by causing it to pass through water spaces on three sides of the ash-pan.

PERMANENT WAYS.—James Ward Hoby, of Blackheath, for improvements in the construction of the permanent ways of railways, which may be generally understood from the claims, which are for a method or methods of securing rails upon longitudinal or transverse bearers, by curved or angular lips on one side, and by bolts and nuts passing through one of the flanges of the rail on the other; or by curved or angular dogs, and bolts, and nuts, or by means of ribs or studs, and keys on the other. The application of chucks along each side of a line of rails, either with or without keys, for securing rails to sleepers. A method of constructing the troughs of longitudinal iron trough-sleepers, for holding and securing the rails, so that one side of each trough shall fit to and support one side of the rail placed within it, and that a key may be introduced on one side of the rail. A method of constructing stretchers of hollow iron, and railway keys, of bent and curved forms, of metallic tubing, filled with wood; and also of an application of a combination of rollers or dies for forming strips of sheet-iron for the purpose.

CARRIAGES AND WHEELS.—John Coope Hadden, of Bloomsbury, for improvements in the construction of railway carriages and wheels. The sides and end pieces of the under framing of railway carriages are to be constructed with bars or plates, the ends of which are bent so that, when placed together, the bendings may lap round each other, in such manner that the corners of the carriages shall be double, or of two thicknesses of metal. The transverse and diagonal ties are constructed with bars bent so as to hold the ends and sides together. The framing of the sides and ends of carriages are constructed with diagonal bracings, or struts, cut flush with the other timbers of the framing. The external covering of the sides and ends of the bodies are placed against or upon the framing, the several parts of which are made flush with each other, for the purpose of securing them in position. The improvements in railway wheels are 13 in number, but not of sufficient importance to detail, all being based on constructions previously patented.

RAILWAY CATTLE INSURANCE COMPANY.—This is a company formed to guarantee the dealers in cattle against the risk and liability to losses and injury resulting from the transit of stock by railway. At present the care of stock so transmitted is left to the officials of the railway, whose precautions in packing and attending the animals are too often insufficient to ensure their arrival free from injury; and, in effect, it is found that a considerable proportion are brought to market much deteriorated in value, without any available remedy, as far as the railway companies are concerned. The parties mainly interested are the grazier, farmer, and butcher; and it is calculated that, by adopting the system of insurance on the plan pointed out by the Railway Cattle Insurance Company, the great expense incidental to coming up with the cattle by rail may, in a great measure, be avoided. On the present system, the drover is employed to collect stock at half-a-crown a head, exclusive of carriage and incidental expenses; but in consequence of the overcrowding in trucks, and the want of careful and responsible supervision, by which there is a sensible deterioration in value and appearance, the price realised is often far less than it would be in the provinces. By the payment of an inconsiderable sum to the Insurance Company's agents, the farmer will be saved the trouble and responsibility of packing and attending his stock, which, after being so insured, would be delivered safely into the hands of the salesman. This duty is to be undertaken by the company for a trifling amount for insurance compared with what is now paid; and in the event of loss, or accident, the farmer will be entitled to the full or proportionate value of the cattle entrusted to the company. The mode in which the company propose to carry out their objects is by appointing officers at all the large railway stations, to take in charge all cattle to be insured, which will be effected by handing over a ticket, or receipt, in exchange for the required premium, after which the entire risk and liability will be removed from the insurer, and undertaken by the company. To alter the ordinary custom and practice of traffic is at all times a difficult matter, but it is no little in favour of this company that they propose to execute a duty which is now but badly performed, at a very greatly reduced charge, and, at the same time, insuring the parties entrusting stock to their protection from the usual losses to which they are now subjected. The plan of railway insurance for passengers has been found to answer admirably, and there is no reason why the insurance of stock should not be well worthy of patronage, provided it is carried out with honourable views and business-like arrangements.

MONSTER LUMP OF ZINC ORE FOR THE EXHIBITION.—A New York paper says—"An enormous mass of zinc ore, from the mines of the New Jersey Exploring and Mining Company, Sussex County, recently passed through the city to the Navy-yard, Brooklyn, to be sent to the great London Exhibition. It is the pure red oxide of zinc, which is found nowhere else in the world but in Sussex County, New Jersey. The dimensions are, 5 feet long, and between 3 and 4 feet broad and deep, the weight being 16,400 lbs. or nearly 8 tons. We understand it took a week to bring it over the mountains from the mines to Dover, on one of the largest sized trucks, with a 12-horse team, and, in coming down the mountains, blocks and tackle, fastened to the trees, were required to hold it back. In coming down from Dover, on the Morris and Essex Railroad, the car it was on broke down. We rather think it will take the premium at the World's Fair."

THE BRITISH ELECTRIC TELEGRAPH COMPANY.

That the invention of the electric telegraph has hitherto only imperfectly fulfilled the great objects of its introduction, and that it is capable of vast expansion in regard to the various important purposes to which it can be applied, is universally admitted. If the public have been slower than might have been imagined in taking advantage of so admirable a system of communication, it is fair to conclude that as yet there have been obstacles to its being properly carried out, which those in whose management it has been placed have failed to appreciate or surmount. The simple fact that in the autumn of 1849, out of 5996 miles of railway, the electric telegraph was used only on 2215, may suffice to show how much remains to be done even with respect to the great lines of communication throughout, and setting aside its varied application to other less imposing purposes. The additional fact also, that in the United States more than 15,000 miles of telegraph have long been at work in the transmission of intelligence, with every prospect of a much greater development of the system, affords decisive testimony that, in the practical application of this beautiful principle, we are far surpassed by our American brethren, and it is too true, also, that any comparison in this respect between ourselves and the nations of the continent will bring us to the same conclusion. It is not very essential to inquire whether this unflattering result may not be attributable to the fact that telegraphic communication has been hitherto, for all practical purposes, a monopoly, and in the hands of one company. The experience of America is of itself a tolerably decisive condemnation of the system at present adopted for making electricity available to telegraphic purposes, and a proof of the necessity for bringing it into daily and popular use.

It is apparently with these convictions that the British Electric Telegraph Company was projected in the autumn of 1849, and has since obtained an Act of Incorporation. It now comes before the public after mature consideration, and in a manner which will command confidence—a company perfectly formed, whose Act of Parliament has been obtained, and which is prepared at once to carry out the principles of electric communication in a cheap and efficient manner, to the full extent that the wants of the public may require. Its main object appears to be, to bring up the transmission of intelligence to the American standard, which it is obvious cannot be done without an assimilation of charges to the American tariff. There cannot be a doubt that high charges, rendered unavoidable by the dead weight of a large unproductive capital, have been chiefly instrumental in impeding the natural growth of the system and the great obstacles in the way of a remunerative return to the proprietors; and it is satisfactory to observe that the present company are fully alive to this important point. Facility and cheapness are alone required to give a new impulse to the use of the electric telegraph in this country, and to render the management of it a most valuable investment.

The objects of the company are enumerated as follows:—1. The construction of telegraphs for the Government, for railway companies, and for private individuals, by contract, for a sum in gross, or for an annual payment, such telegraphs being worked and maintained by their respective owners.—2. The maintaining in efficient working condition telegraphs, whether erected by the British Company, or by other persons, under contracts for annual payments.—3. The sale of licenses under the powers of the company.—4. The construction of telegraphs, to be the property of, worked, and maintained by the British Electric Telegraph Company, for the transmission of intelligence at a fixed tariff, or upon terms to be agreed upon. In order to give practical effect to the details of their plan, the directors have secured and availed themselves of the inventions of the Messrs. Highton, exhibited in 1849 before the Society of Arts, and for which they received the large gold medal of the society. The attention bestowed by these gentlemen on the science of electricity, in connection with telegraphic communication, and the success which has attended the practical carrying out of their telegraphs upon most important portions of the London and North-Western Railway, justify the highest anticipations of benefit from their co-operation. The various improvements recently introduced form an interesting feature in the statement put forth by the directors of the British Company, for detailed explanations of which we refer our readers to the documents issued from the office, which will well repay a careful perusal. The saving to a railway company from the use of the electric telegraph for their own special purposes is estimated at 30l. per mile per annum—an enormous amount, most strikingly illustrative of the value of the invention, and of the inestimable uses which it may be made to subserve. Doubtless, much profit may also be anticipated from the use of telegraphs for a multitude of purposes connected with private establishments; but it is evident that the main reliance of the company must be on the public, and in the facilities they offer for the ready and cheap transmission of every kind of intelligence.

No better proof can be afforded of the great anxiety of the public for the success of this company than the great number of petitions which were presented to Parliament in its favour during the passing of the bill. London, Liverpool, Manchester, Leeds, Glasgow, and almost every other important town in the kingdom sent several petitions in its favour to Parliament. There is, likewise, in the sister country a wide field for the operations of the British Company. In that country at the present moment, there is not a single mile of telegraph; and the directors appear to be fully alive to the opportunities which are presented for the development of the resources and the advancement of the status of the mercantile and commercial public of Ireland.

We perceive, moreover, that the Lord-Lieutenant has expressed a deep interest in the success of a plan by which the prosperity of Ireland will be essentially promoted.

To ensure the triumph of the telegraphic system, it is justly stated that four conditions are essential—viz., cheapness, certainty, dispatch, and convenience for collecting and distributing intelligence. If the charges of the British Company are assimilated (as is intended) either to those in America, or to the postal charges prevailing in this country, previous to the introduction of the penny system, the telegraph will, no doubt, be extensively used in aid of the post. In fine, the views of the directors of the new company are sensibly and temperately stated; and we see no fair ground to suspect the soundness of the conclusions which they have arrived at. To carry out their propositions, it is now intended to issue 4000 shares, of 25l. per share, a deposit of 2l. 10s. being payable on each; such capital (100,000l.) to be raised as it may be required; and when the collective benefits likely to result from the undertaking are duly weighed, it may be fairly considered to present attractions, both on public grounds and as a private investment, which widely distinguish it from the ephemeral projects that are from time to time put forth upon the public.

In America there exists near upon a score of electric telegraph companies—all of which are in good working order, and paying handsome dividends, although the cost per mile of laying down the wires is about the same as in this country, and the charge per message is two-thirds less than that demanded here. Facts like this require no comment. Surely the parent company is not inferior in business requirements, or commercial enterprise, to her sons on the other side of the Atlantic; and if 20 telegraph companies can remunerate their respective proprietors there, there can be no hesitation in believing that in England one company, based upon such sound popular principles as the British Electric Telegraph seems to be, will be eminently profitable and successful.

INDIA-RUBBER GAS-HOLDERS.—Mr. J. L. Hancock has just completed four portable gas-holders, destined for the city of Mexico, which are in several respects worthy of notice. As no workmen are to be found in the capital of Montezuma capable of putting an ordinary sheet-iron gas-holder together, and as the cost of sending out competent men from this country for such a purpose would have amounted to a large sum, it was suggested that a substitute for iron might be found in canvas rendered impermeable to gas by india-rubber, and Mr. Hancock's experience was called in to aid the carrying out of the suggestion. The vessels made by him are cylindrical bags, 12 feet diameter and 15 feet high, formed of a double thickness of strong canvas, stuck together with a solution of india-rubber. Rings of three-eighth inch round iron are introduced in the sides at intervals of about a foot, so as to keep them in their circular shape, and the whole, when packed, represents a disc of 12 feet in diameter, by a few inches in thickness, in which form they are intended to be transported to their destination. The cost of each gas-holder complete is 55l., or about 8d. for each cubic foot of its contents, a sum considerably less than the cost of a tank and gas-holder of this dimension, and of the usual construction in this country.—*Journal of Gas Lighting.*

ON FIRE, AND ITS ANTAGONISTS.—A series of lectures, by Mr. Pepper, on this subject, is being delivered at the Polytechnic Institution. The professor commenced by observing that it was chiefly intended for a juvenile auditory, and, therefore, any lengthened preface would be unnecessary. The audience was then reminded that the principle called "fire" had always been invested with a mysterious dignity, and was worshipped by the Persians, the Magi, and the Chaldeans, as a deity, a god—that Aristotle considered it as a component part of the globe, and classed it with the earth, air, and water, calling them all elements. The sources of fire were then demonstrated, and everything the lecturer seemed to touch, even water, was resigned to the dominion of fire. Various combustions, on a large scale, then followed; one flame was 20 feet in length; also the magnificent fire-cloud, with its beautiful rolling and undulating flame; then came fire of different colours; and, last of all, fire was sent about in various parts of the lecture-room by trains of gun-cotton, reminding us of the passage of electricity. The lecture, which was applauded throughout, was attended by a crowded audience.

A CERTIFIED CURE OF SCROFULA BY HOLLOWAY'S OINTMENT AND PILLS.—The following certificate from Mr. Thomas Alcorn, of Jerry's Plain, New South Wales, was forwarded to Professor Holloway by Mr. Pinkney, chemist, of the same place:—Jan. 1, 1849.—"This is to certify, that my daughter, aged seven years, was afflicted with scrofula for three years, and that, after she had been attended by several respectable medical practitioners without success, I was induced to try Holloway's Ointment and Pills, which remedies in about three months completely cured her, and she is now in the best of health. This can be verified by numerous persons in this vicinity, where I have resided for 22 years. (Signed.) R. Alcorn."

A Compendium of British Mining.

BY J. Y. WATSON, ESQ., F.G.S.

No. III.—THE SYSTEM OF CORNISH MINING.

The management of most of the Cornish mines (excepting those managed in London) is in the hands of a committee, consisting generally of the largest shareholders in the county, or as they are termed, *in-adventurers*;* but, in many mines, a gentleman chosen from the adventurers, and called the *purser*, has the entire management, keeping the accounts, and paying all moneys. At the meetings of the adventurers, which, under the Cost-book System, ought to be held on the mines *every two months*, the purser presents a statement of the accounts, to be audited. The conducting of mines, on what is termed the "Cost-book Principle," is peculiar to the county of Cornwall, where it has for ages been recognised by the Stannary Courts, and is in itself extremely simple. There has, however, been of late much discussion upon its privileges and powers, and which has tended more to mystify than to explain. All companies for working mines, formed and carried on upon the principle of the cost-book, are especially exempt from the operations of the Joint-Stock Registration Act. The simple principle is this:—On the formation of a company a cost-book is produced; on the first page is given the name of the mine, with a form something like the following:—

We, the undersigned, do hereby consent and agree to become shareholders, adventurers, and partners in the mine, situate in the parish of _____, in the county of _____, in the shares and proportions hereunder, the entirety of the said mine being divided into _____ shares, and the mine conducted on the usual Cost-book Principle.

Under this the names of the shareholders are entered, with the number of shares taken by each adventurer, and he signs it opposite his name. The rules and regulations for the government of the company are then made, and entered in like manner. These generally refer to the privileges and powers of the "cost-book," provide for their being carried out, and for the general management of the company. All debts and liabilities incurred in working the mine should be paid every month, and a meeting of shareholders called every two months, to audit the accounts, examine vouchers, &c. If there be debts, a call should be made to pay them off, and to provide money for the next two months' working. If any profits, they should, so far as may appear prudent, be divided. By this arrangement, which is the best feature in the cost-book, every shareholder knows his liability, and can end it at any two-monthly meeting, it being part of the system (and should be provided for in the rules), that at any two-monthly meeting a shareholder may pay his proportion of debts due to that date, and "sign off" his name from the cost-book, as no longer a shareholder, and, consequently, not liable for any debts contracted after his signing off. For instance, say A.B. has $\frac{1}{10}$ th in Wheal _____, and the debts amount to £400, he pays his 10s. down, signs off, and in 12 months is entitled to his proportion of the value of the materials, machinery, &c., at the time of his signing off. The cost-book should be kept by the purser, or secretary, who must convene meetings, make calls, pay and receive money. It is, however, competent for the shareholders to delegate two or three of their body to act as a finance committee, and in London companies this plan is generally adopted. Under the cost-book, if a party wishes to dispose of all, or any part of his interest, a written notice to the purser, signed by the seller, and accepted by the buyer, subject to the rules and regulations of the cost-book, is sufficient; this is pasted or entered in the book, and constitutes the transfer.

Next to the purser is the head captain or manager, who superintends the whole of the mine, and the general routine of the surface work; the underground captains seeing that the work is there conducted properly. The persons performing the work in the various parts of the mine may be divided into tributaries, tutworkmen, and labourers.

Tributaries receive a certain portion of the ore, or so much in the pound (as may be agreed upon) in the value of what they raise.† Tutworkmen work by the piece, generally calculated by the fathom; in this way the shafts are sunk, adits and levels driven, and the labour usually performed in those parts of the mine which do not produce ores; the labourers are generally employed on the surface dressing ores, &c., and consist of men, boys, women, and girls. The population engaged in mining in Cornwall has been estimated as follows:—

COPPER: agents, 31; dressers, 266; miners, 13,737; add for unspecified proportion, 3600—estimated total, 18,000.

TIN: agents, 2; miners, 5836; dressers, 629; labourers, 82; smelters, 34; streamers, 71; testers, 2; unspecified proportion, 1600—estimated total, 8200.

LEAD: dressers, 52; agents, 2; miners, 440; unspecified proportion, 100—estimated total, 600. Lime dealers, 44; clay-merchants, 9; labourers, 216; iron miners, 85; manganese miners, 69; slate quarriers, 69; unspecified assayers, 43; tin and copper miners, 4044; mixed ore miners, 353; surface miners, 625; ore dressers, 427; smelters, 32; quarrymen, 222.—Total engaged in mining, exclusive of labourers, 27,422.

The dependants on this large number will bring up the total deriving their subsistence from mining to 100,000.

The general features of a mining district have been graphically sketched by a talented writer—

To one unaccustomed to a mining country, the view from Carn Marth, which is a rocky eminence of 757 feet, is full of novelty. Over a surface, neither mountainous nor flat, but diversified from sea to sea by a constant series of low undulating hills and vales, the farmer and the miner seem to be occupying the country in something like the confusion of warfare. The situations of the Consolidated Mines, the United Mines, the Polidice Mine, &c., are marked out by spots a mile in length, by half a mile in breadth, covered with what are termed "the deads" of the mine—i.e., slaty poisonous rubbish, thrown up in rugged heaps, which, at a distance, give the place the appearance of an encampment of soldiers' tents. This lifeless mass follows the course of the main lode (which, as has been said, generally runs east and west), and from it, in different directions, minor branches of the same barren rubbish diverge through the fertile country, like the streams of lava from a volcano. The miner being obliged to have a shaft for air at every hundred yards, and the Stannary Laws allowing him freely to pursue his game, his hidden path is commonly to be traced by a series of heaps of "deads," which rise up among the green fields, and among the grazing cattle, like the workings of a mole. Steam-engines and *whins* (large capstans worked by two or four horses) are scattered about; and in the neighbourhood of the old, as well as of the new, workings are sprinkled, one by one, a number of small whitewashed miners' cottages, which, being neither on a road, nor near a road, wear, to the eye of the stranger, the appearance of having been dropped down *apropos* to nothing. Such, or not very dissimilar, is in most cases the superficial view of a country, the chief wealth of which is subterranean. Early in the morning the scene becomes animated. From the scattered cottages, as far as the eye can reach, men, women, and children of all ages begin to creep out; and it is curious to observe them all converging like bees towards the small hole at which they are to enter their mine. On their arrival, the women and children, whose duty it is to dress or clean the ore, repair to the rough sheds under which they work; while the men, having stripped and put on their *underground* clothes (which are coarse flannel dresses), one after another descend the several shafts of the mine, by perpendicular ladders, to their respective levels or galleries;—one of which is 990 feet below the level of the ocean. As soon as they have all disappeared, a most remarkable stillness prevails—scarcely a human being is to be seen. The tall chimneys of the steam-engines emit no smoke, and nothing is in motion but the great "bobs" or levers of these gigantic machines, which, slowly rising and falling, exert their power, either to lift the water or produce from the mine, or to stamp the ore; and, in the tranquillity of such a scene, it is curious to call to mind the busy occupations of the hidden thousands who are at work; to contrast the natural verdure of the country with the dead product of the mines; and to observe a few cattle ruminating on the surface of green sunny fields, while man is buried and toiling beneath them in darkness and seclusion. But it is necessary that we should now descend from the heights of Carn Marth, to take a nearer view of the mode of working the mine, and to give a skeleton plan of that simple operation.

A lode, as before stated, is a crack in the rock, bearing, in shape and dimensions, the character of the convulsion that formed it; and it is in this irregular crevice that Nature has, most irregularly, deposited her mineral wealth; for the crack, or lode, is never filled with ore, but that is distributed and scattered in veins and bunches, the rest of the lode being made of quartz, mudic, and "deads." Under such circumstances, it is impossible to say beforehand where the riches of the lode exist; and,

* All those who hold shares in a mine are called "adventurers."

† The mode of ascertaining the standard of tributary's ore is not generally known. When the private, or tributary's, produce is under the public produce, 2 per cent. is added to the public standard, and, *vice versa*; when the private is above the public, 2 per cent. is deducted. Supposing, therefore, the public produce is 84, and the standard 107.14s.

No. of parcel.	Prod. of public.	Public Standard.	Standard.	Value of Parcel per ton.
1	71	84	107 14 0	£109 19 0
	Diff. 13			
2	94	101	107 14 0	£105 19 0
	Diff. 23			
3	6	107 14 0	112 4 0	£112 4 0

‡ Recently a vast improvement in the mode of descending deep mines has been accomplished, and is in successful operation at the Tresavean Mine.

therefore, if its general character and appearance seem to authorise the expense, the mine is commenced in the manner before explained.

The object of perpendicular shafts and horizontal galleries is not so much to get at the ores, which are directly procured from them, as to put the lode into a state capable of being worked by a number of men; in short, to convert it into what may now be termed a mine. In the Cornish mines, the sinking of the shafts, and the driving of the levels is paid by what is termed *tutwork*, or taskwork—that is, so much per fathom; and, in addition to this, the miners receive a small per centage of the ores, in order to induce them to keep these as separate as possible from the *deads*, which they would not do, unless it were thus made their interest. The lode, when divided as above described, is open to the inspection of all the labouring miners in the country; and, by a most admirable system, each mass or compartment is let, by public competition, for two months, to two or four miners, who may work it as they choose. These men undertake to break the ores, wheel them, raise them to the surface, or, as it is termed, *to grass*, and pay for the whole process of dressing the ores, which is bringing them to a state fit for market. The ores are sold every week by public auction, and the miner receives immediately the *tribute*, or per centage, for which he agreed to work, which varies from 6d. to 13s. in 1l., according to the richness, or poverty, of the ores produced. The owners of the mine, or, as they are termed, the *adventurers*, thus avoid the necessity of overlooking the detail of so many operations, and it is evidently the interest of the miner to make them gain as much as possible. Should the *pitch*, or compartment, turn out bad, the miner has a right, at any time, to abandon his bargain, by paying a fine of 20s. At the expiration of the lease, or whenever they may be abandoned, *pitches* are anew put up to auction, and let for two more months; some may be getting richer, others poor, as the work proceeds; and thus public competition practically determines, from time to time, the proper produce which the miner should receive. The different rectangular masses, or *pitches*, into which the lode is divided by the galleries and shafts, very seldom turn out to be of similar value; and they are, of course, worked exactly in proportion to their produce. In one compartment the whole of the ore is worked out; in another only a proportion will pay for working; while not a few turn out so poor that no one will undertake to work them at all. The *pitches* are, in most cases, taken by two miners, who relieve each other; and one often sees a father and son, who are in partnership, gradually find the lode turn out poorer and poorer, until they are at last compelled to pay their fine, and quit the ungrateful spot. The lottery in which the *tributers* engage abounds in blanks and prizes. Sometimes the lode gets suddenly rich, sometimes as suddenly poor, and occasionally a productive lode altogether vanishes, or, as the miners say, has *taken a leave*; by which they mean that some convulsion of Nature has broken the lode, and removed it off—sometimes 200 or 300 feet—to the right or left. In order to determine where to find it, those well acquainted with the subject carefully observe the fracture, or broken extremity of the lode, and, from its appearance, they can determine on which side, and in what direction, to search for the lost prize. Sometimes, again, a lode which is paying very well, is, all of a sudden, found to have *taken horse*, which means that it has split into two lodes, separated from each other by an unproductive mass, which the miners term a *horse*; and, although the aggregate of the two lodes frequently contains the same quantity of ore as the original single lode, yet as the expense of working is doubled, it often will not pay to work them; for in all mining operations it must be constantly remembered, that it is not the quantity, or even quality of the ores, that can induce a prudent man to work them, if the *expenses*, from any circumstances, should exceed the *returns*.

There is no light in a mine but that afforded by the candles of the workmen; while the universal presence of water soaking through the crevices of the gallery, and intermixing with the dust and rubbish, keep up a constant succession of dirty puddles, rendering it no very pleasant affair going underground. Each miner has a candle, which is stuck close by him against the wall of his gallery, by means of a piece of clay; and, besides those employed in extending the gallery, there are generally one or two boys wheeling the broken ore, &c., to the shaft. Each boy has a candle affixed to his wheelbarrow, by the universal subterranean candlestick—a piece of clay. The men relieve each other every six or eight hours, and thus keep on their work uninterruptedly, except on Sundays. Notwithstanding this incessant labour, the progress of the miner in excavating his gallery is, in general, very small—1, 2, or 3 feet in a week, or a few inches daily, is often the whole amount of the united operations of 20 or 30 men. In loose lodes, and in killas districts, they cast more, but the lode is rarely so wide as the gallery, or level, so that it becomes necessary to cut away the solid rock on each side which is often very hard, even when the lode is soft.

In working by tribute, the miner naturally does all he can to enrich himself, but the system is so admirably balanced and arranged by long practice and experience, that it is very difficult for him to enrich himself, without also enriching the owners or *adventurers*. Still, however, there are modes by which he occasionally endeavours to defraud his employer. The miners will sometimes steal each other's ores. If they come to a very good lode, they will occasionally hide their ore under the rubbish, or *deads*, with the view of making the profit they are getting appear to be inconsiderable, and, of course, being able, at the end of their contract, to take on their *pitch* for another two months at an easy rate. They, perhaps, succeed in this; but when they go to reap the benefit of their fraud, they sometimes find that a brother miner, still more cunning than themselves, has discovered their hidden treasure, and has carried it off. The most usual mode of fraud, however, is a combination between two *tributers*, one of whom is working very rich, and the other very poor ores. The tributary who is working poor ores has, perhaps, bargained that he is to receive 13s. out of every 20s. worth of ore; while his friend, who is working the rich ores, is to get only 1s. out of 20s. In the dark chambers of the mine these two men secretly agree to exchange some of their ores, and then to divide the gross profits, which are, of course, very large; for, by this arrangement, instead of 1s. they get 13s. out of 20s. for a portion of the rich ores, while they lose but a trifle on a corresponding portion of the poor ores. There are a few other methods of defrauding the *adventurers*; but in the diamond cut diamond system of the Cornish mines a severe check upon all such tricks is established in the appointment of a number of excellent men, who are selected from among the working miners, to superintend all their operations; these men, having been brought up in the mines, are, of course, acquainted with the whole system. They have fixed salaries of about 80l. or 90l. a year, and are termed *captains of the mines*. [To be continued in next week's Mining Journal.]

LITERARY NOTICE.

Patentable Invention and Scientific Evidence: with an Introductory Preface. By WILLIAM SPENCE, Assoc. Inst. C.E., author of a *Treatise on the Specification*, &c. London: Stevens and Norton, Bell-yard, Lincoln's-inn.

At a time when much excitement exists with respect to a general modification and reform in our Patent Laws, the publication of the opinions and suggestions of practical men is highly desirable. The author of the volume before us has evidently paid much attention to the subject. He has devoted the work more to a consideration of a desirable alteration in the practice of the law than in the law itself, without any prejudice to the proposed alterations of the mode of granting patents, their cost, the period from which they should bear date, the question as to the regulation of hearings before the Attorney or Solicitor-General, the depositing of particulars of inventions, the regulation of the Enrolment-office for specifications, or the preparation of indices for public inspection, as has been proposed. The dictum on which the author founds his remarks is that patentable invention is a manufacture, and nothing else. He denies that copyright of designs, according to the Act 6 and 7 Vic. c. 67, embraces a manufacture; therefore, a patentable invention being a manufacture, cannot be protected by a registration; and, on the other hand, a design not being a manufacture, cannot be protected by a patent. In his essay on *Scientific Evidence*, the author investigates the nature of the inquiries in patent cases, gives a brief statement of the law as to the admissibility of scientific evidence, compares the present practice with the foregoing statement of the law, and finally suggests improvements in the practice. It is impossible to divest works of this nature of that dryness to the general reader which is inherent in the subject; but to inventors and patentees the volume will prove of much interest, and, under any actual alteration or modification of the law, or the practice, of considerable value.

NOVEL APPLICATION OF GALVANIC ACTION.—It is announced in the *Madras Spectator*, September 13, that a person in that town has discovered a substance which he calls *fibre* (what it is remains a secret), which, under galvanic action, contracts suddenly to one-fourth of its length, "its power being equal to 100 lbs. on every square inch of its sectional surface." The inventor has constructed a model engine to show the application of the new motive-power. A reciprocating beam attached to an ordinary crank, with fly-wheel of about 4 feet in diameter, is fitted at each end with a cylindrical piece of the fibre, insulated by a plate of glass. Near the frame is a small galvanic battery. Operations are begun by giving a shock from this battery to one of the pieces of fibre, which immediately and violently contract, drawing the beam down on that side, and of course communicating motion to the crank and fly-wheel. So soon as the centre has been turned, another shock given to the opposite piece of fibre continues the motion, and the shocks being alternately repeated, the fly-wheel soon gains an enormous speed.—*The Architect and Building Gazette*.

ON THE GEOLOGICAL AND MINERAL FEATURES OF CERTAIN DISTRICTS OF NORTH WALES.—No. VI.

BY ST. PIERRE FOLEY.

CRAFANT COPPER MINE.—On visiting this mine a few months back I found the state of the works then as follows:—A crooked level driven 7 or 8 fms. into the side of the mountain, about 480 feet above the level of the river flowing beneath, had cut a vast body of solid copper ore, which was then full in view, and at least 7 feet high and 6 feet in breadth, from which a cargo of ore has been shipped, which produced 22l. per ton. A "sink," or sub-shaft, was sunk under this level about 4 fms., and a driving made west at that depth to cut the lode on this body of ore, and from which cutting large quantities of ore were raised. Solid stones of pure ore were, at the time of my visit, on bank, taken from this level and sub-shaft, in weight from 1 cwt. to 3 cwts., some of which masses still remain on the flooring, as monster specimens. On my next visit, in October, I found that another great discovery had been made, 200 yards west of the level and sub-shaft just alluded to, by a small cross-cut; and here a *wall*, literally of solid ore, was then stripped, 8 ft. by 5 ft., but the breadth of the lode, not having been cut through, could not be conveniently ascertained. Other trials of minor note were prosecuting, and adit levels driving to cut this great lode at a depth under the horizontal range of the upper level, of about 15 fms. On my last visit, a short time since, a third great discovery was laid open, still westward, at a considerable distance from the one last alluded to, but exactly on the line of bearing of the lode cut in the first level, and proved by the above cross-cut. The lode at this third discovery is very rich in copper ore, but not entirely solid, as in the other discoveries; it is about 5 ft. wide, and even at surface will make perhaps 2 tons of good ore per fm. The adit levels were still prosecuting, and the intelligent captain of the mines has the utmost confidence in attaining great bodies of ore when these adits are driven home. A sink on the second discovery was made to about 5 fms., when the mines were obliged to be discontinued, in consequence of vast springs pouring forth from all parts of this shaft in descent. Still, however, the lode proved rich, and supported its bearing character satisfactorily. Captain Treweek has commenced an adit level to command 10 or 12 fms. of this part of the mine, which he hopes to drive so as to cut the lode in two or three months. When these two levels are completed, a vast extent of rich ore ground can be commanded, and returns in proportion may be expected. A small cargo of ore had been shipped, a few days anterior to my last visit, which I heard obtained a high price—20l. per ton. Crafnant Mine is on the side of one of those vast chains of mountains running nearly east and west through this division of North Wales. It is about three miles from the very neat village of Llanbedr, and an equal distance from Harlech. The former is a safe and convenient shipping port, from whence the ore is conveyed to market. The mine itself lies in *clay and porphyritic schist*, and the lode seems to be composed of very rich copper pyrites, interspersed with quartz, and here and there with the black oxide of copper and copper gossan, in which traces of gold have been found. A splendid river, from a beautiful lake, Cwmorthin, some distance eastward, constantly flows along the base of the mine, and from which the mountain rises at an angle with the horizon of about 60°. The inclining range of the mountain in which the mine lies seems to be the same as that of the lode, and the extent of the sett is pretty considerable. As this district is rich in other minerals, scarcely as yet noticed, I will, with your permission, advert to some of them, and add a few extracts from Capt. Treweek's late reports on Crafnant Mines, in my next article. *Lincoln's Inn-Fields, London.*

COMPENDIUM OF BRITISH MINING.—No. II.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In the third paragraph, Mr. Watson states:—

In commencing a mine a shaft is generally sunk about 20 or 30 fms., when an adit level is driven east and west, for the purpose of ventilating the mine, and for drawing off the water as the shafts get deeper. At every 10 fms. the shaft is sunk, similar levels to the adit are driven east and west, subdivided by small winzes of about 10 fathoms high and 16 fms. apart. The engine-shaft is always sunk to a greater depth than the lowest level, in order to keep the working shafts free from water. The ore broken from the lodes is drawn to surface by an engine.

It more frequently happens that a mine commences by driving in a level at the lowest possible depth, either on the course of the lode, or by a cross-cut through the country, whichever offers the greatest facility, sinking a shaft being a secondary consideration. The advantage of driving on the course of the lode is proving its quality, size, and underlay, as well as the nature of the strata it is imbedded in, and I have known such level driven into a hill 50, 70, and 100 fms., independent of any shaft whatever. The advantage of an adit cross-cut through the country (as at *East Tolgus* and *other mines at this moment*) is the cutting of all the lodes it passes through, and enabling you to "turn house" and drive upon either, or all of them, if thought desirable. I have known adits thus driven, lodes cut and duly explored, prior to the adventurers going to a penny expense in shaft sinking. And as regards sinking them to "20 or 30 fms. depth at the commencement, for drawing off the water," many adits are not above half that depth; 30 fms. is a deep adit in most districts.

It is far from a general custom to drive levels at every 10 fms. sunk, or to sink "small winzes 16 fms. apart." For instance, at Wolfe's engine-shaft, at Great Consols, the first level under adit is 23 fms., the next 40; below the 130 east, the levels are 145 and 160. At Pearce's engine-shaft, below the 160—175, 188, and 200 fm. levels. At Taylor's, below the 120—135, 150, 160, and 175. Innumerable instances can be supplied from other mines. As to "small winzes," few mines have them at so short a distance as 16 fms. apart; many are three, four, and five times that distance, especially where the lode has been poor for any length; there is then little inducement to sink them, unless for purpose of ventilation. Neither is "the engine-shaft always sunk to a greater depth than the lowest levels, in order to keep the working shafts free from water." For instance, at Tresavean Mine, at this time, the old east shaft is down 303 fathoms below adit, while Harvey's engine-shaft (from whence all the water is drawn out of the mine, as well as Treviskey, Trethellan, Brewer, and West Trethellan Mines) is only down to the 286 fathom level below adit; consequently, the water at east shaft (the *deepest workings*) has to be drawn by a flat-rod lift, 20 fms. high, to flow over to the engine shaft before it reaches adit level, and thus finds its way into the sea. There are many similar cases, where shammel engines draw water from the extreme bottoms up to a higher level, from whence it flows over to the principal engine, which lifts it to adit. It is only in deep and very productive mines that steam-whims for drawing up the ore are required or used: a vast proportion of the ore, when broken from the lodes, is drawn to surface by "horse-whims," and not by an engine, which, unless it has full work day and night, is found more expensive than horses.

In the sixth paragraph, Mr. Watson states:—"The monthly produce of ore is made into heaps of about 100 tons each; samples of these are sent to assayers, to determine the value according to the produce, and the samplings are then sold at the weekly ticketings."

Now, the fact is, that a day or two before sampling is "mixing, dividing, and weighing-in day." The captains then cause every pare of tributaries to turn over their respective piles of ore, cut and divide them; from which the captain takes a sample over to the sampling-house, to have properly bucked down; from this is taken one sample by the agent, and another by the tributary, each for the purpose of getting assayed, which assay is called the miners' sample. After every pare of tributaries' ore has been thus mixed and sampled, it is carried in barrows to the general pile for mixing; this is done by spreading it out into a widely rounded heap, which is turned, cut through, and mixed, as the captain directs; he then sees it all properly taken, barrow after barrow, to six different piles, called *doles*, to each an equal quantity; and these six doles constitute a parcel of ore ready for the companies' samplers to attend and take samples for their respective assays.

To show that these "heaps" of six doles each are less than 100 tons, I refer to your weekly account of ticketings, instancing only the sale of last Thursday, viz.:—

Tributary Mine	No. of "heaps"	They were from
Trethellan	12	83 to 108 tons.
North Eoskear	9	seven of them 80 to 91 "
Wheal Seion	6	all of them 77 to 81 "
South Frances	4	" 69 to 47 "
Fowey Consols	3	" 77 to 70 "

Each "heap" being in six doles, and all the above mines prosperous, and making regular dividends. The whole sale, in fact, consisted of 52 heaps (six doles each), and were only 3546 tons, the average being 68 tons, and not 100. Well, then, the smelters' sampling agents have arrived on the floors, to take nine samples of every parcel to be offered for sale at the ticketing some 16 to 18 days after. They direct two or more doles out of every six (which a parcel contains) to be cut through from top to bottom, leaving an opening full 1 foot wide, right across the pile. They then take

shovel in hand themselves, and trim down both sides of these openings, and throw the trimmings over the pile; they trim down the sides once more, and fill a barrow with this second trimmings, which they follow from the ore floors to the sampling house, and there see it bucked down and riddled upon an iron plate to a fine powder, well mixed up together in a rounded pile, which they cut in quarters, ejecting two and retaining two parts thereof; this is again mixed, rounded, and quartered, and two parts retained as before, and mixed into a heap, from which they fill nine sample bags, one for each of the smelting companies, and the captain takes one himself, on behalf of the mine. Each sample-taker conveys the bags containing these ore samplings to the assayer of his company, who tries them for copper only, and reports to his cashier the produce thereof. The average during the last quarter of a year is that 100 tons of ore yielded only 7 tons 18½ cwt. of fine copper; Wheel Maria ore being included in this, the ore from whence is regularly sampled on the last Friday in every month, and sold at the ticketings on the third Thursday after, except when that happens blank, then they sell on the Thursday following. The intervening time allows ample means for an accurate assay and calculation being made, and transmitted separately to the various smelting establishments.

Truro, Jan. 9.

ARGUS.

THE ORIGIN OF ORES IN LODES—THE PENTIRE GLAZE MINE.

SIR,—I should feel obliged by your allowing me space to ask a few questions, and to make a few remarks, on the report of Pentire Glaze Mine—your correspondent, Mr. Rowlandson, having some knowledge of that locality, and the large north and south lode, and about the quantity of lead taken from it by Messrs. Williams and Co. I had set the lode down for a large regular champion ore, extending in a direct and continuous line to or about a mine on the west side of the River Camel, formerly called Legossic, and continuing on from thence south—being at all times willing to give preference to scientific knowledge, and particularly such as we may expect from Mr. Rowlandson. Though many of his remarks are quite new to me, I am extremely obliged for his laying them before the public. The old adage says—"A man is never too old to learn;" and I have no doubt but those converted to the igneous principle, will set down his revelations on the origin of ores in lodes as a great truth; but I venture to follow him, remarking on his interesting observations, and ask for a further explanation, before I become a convert to his theory. He first says, "the lode is in killas, or clay-slate, that has been upheaved by eruptive masses of greenstone, but the lode is conformable to the dip of this greenstone, and lays within a few feet of it." Does Mr. Rowlandson mean to assert that this eruptive greenstone is parallel, and continues with the lode to or towards Legossic Mine; or is this greenstone, or trap-rock, a continuation of that mountain mass at Padstow Point, and running near at right angles to the lode, and on to Endelion?—If so, it would have caused the ore to form at this point. I should be inclined to think the latter is the case, as it would have a great tendency to cause ores to accumulate at that junction. If, as Mr. Rowlandson says, it is an eruptive mass, we might reasonably conclude eruptive matters would be thrown up in something of a sugar-loaf or cone shape; in that case, we might expect to have found the lode at this point forming about a half circle. Will that gentleman tell your readers if it is found so; or is it a straight continuous lode without this circular curve? Mr. Rowlandson next states that the contents of the lode were at the time of this upheaval heated to fusion, in which state the ore ran into its present position, filling all the crevices in the slate, which is certainly a beautiful idea; but it brings something with it that I cannot easily swallow, fearing it will not digest, as it is well known that the 2000 tons of lead that Mr. Rowlandson mentioned was found near the surface, and all the ground opened on the lode under the sea produced but a very small portion of lead ore—then how does Mr. Rowlandson account for specific gravity in volcanic eruptions? Is it *vice versa* with our smelting furnaces, and the melting lead floated on the top? Even, then, *Vulcan* must have been near at hand to pull out the plug, and let all the lead run from this melting mass of volcanic matter, when it ran nicely into this crack in the clay-slate; but it is rather odd that this crack should have been a straight continuous one for miles after leaving this eruptive mass. We certainly do discover some very mysterious works performed by Nature's laws at times. Mr. Rowlandson having kindly given us the foregoing explanation, I would ask him to inform us where it was, and in what state this ore was before this eruptive upheave took place and passed into the lode. Was it sulphureted or carbonate ore, or native lead? And if he ever saw galena, or sulphureted ore of lead, reduced by fusion, on a large scale, without becoming pig or tough lead; in that case we might reasonably expect to have found this mass of 2000 tons all native lead a very rare specimen, and well worthy of being carried to the Great Exhibition. As most are aware it was not found so, will Mr. Rowlandson tell us what chemical process it has gone through in Nature's laboratory, so as to return it to the large flake blue sulphureted ore of lead, accompanied by the beautiful white carbonate of lead, as it is now found. With regard to the latter, it is not to me so much a mystery as the former. Were Mr. Rowlandson to apply to Capt. N. Tregay, who, after 20 years' experience in this mine, and more particularly in the specimen department, I have no doubt but he would tell him how long he had to remain absent, after robbing Nature's cavity of one lot, before he could return again and find new ones grown out in the same spot, and these grown to perfection, without the aid of any of those great heats produced from volcanic eruption. Many thanks to Mr. Rowlandson for his explanation as to the origin of ore in lodes. If authenticated, we must all become converts to the doctrine of—"Where it is, there it is." As promising lodes, their direction or mineralised strata, or magnetic current, can have no effect in producing the ores, if it was projected into the lode a 1000 years ago, since, by a volcanic upheaval in that case, all lodes were dependent on upheaves, and the ore that was then in the fused mass; and science can have nothing to do with mining, further than to excavate the mines. Has Capt. Dunstan also become a convert to this theory?

Widalscombe, Jan. 13.

N. ENOR.

P.S.—I believe the new lode discovered, 8 fms. distant, to be nothing more than a split gone off from the main lode. If it is a parallel and distinct lode, the chances are fifty to one against its producing much ore. If it is a split, it is very likely to produce ore; but not to the extent that the main lode did.

PENTIRE GLAZE AND PENTIRE UNITED MINES.

SIR,—My attention has just been called to an article in your Journal, of the 11th inst., in which my name appears connected with your reply to "Fair-Play," and, since it is so, I feel bound, for the sake of truth, as well as in justice to those who may be more deeply concerned than myself, to inform you, and through you the public generally, that on the 21st of December last, I did, in connection with Mr. Thomas Rowlandson, inspect and report on Pentire Glaze and Pentire United Mines, and in my opinion, we gave a very favourable report, which the circumstances of the mine warranted our doing; but, after the report had left me, some how or other, some slight alterations were made, but only one that affected the sense intended to be conveyed in the original report. I have the original by me, and on being favoured by Mr. Rankin with a circular stating the proceedings of the meeting (held in London on the 28th ult.), in which our reports appeared, I at once compared the copy with the original, and found the alterations alluded to above. On seeing this, I wrote Mr. Rankin for an explanation, to which he (Mr. Rankin) replied in a very satisfactory manner, stating that it was not his wish nor intention to alter the report, and that it must have been done by Mr. Rowlandson in copying, and, perhaps, through oversight.

Now, Sir, having said this much, it is necessary that I should point out the alterations which materially affect the sense and truth of the report—i.e., the joint report of Mr. Rowlandson and myself—viz.: in the original, in speaking of the new or middle lode, we stated "that this lode has been opened on to the extent of 30 fms., 28 fms. of which is productive ground, yielding at different places from 1½ to 2 tons of ore per fm." but, in the copy, the words "at different places" are omitted, and it is rendered thus, "the new or middle lode, which was discovered by driving the cross-cut west, has been opened on to the extent of 30 fathoms, 28 fms. of which is productive ground, yielding from 1½ to 2 tons per fathom." This is the only omission that I see worth noticing, although there are some other words left out that neither alter the sense, nor affect the truth of the report.

As regards the 22 fathom level, I think, if your correspondent, "Fair-Play," would carefully read our report over again, he would see that we did not say there is any ore in the 22 fm. level, but that they are driving north towards the ore ground gone down in the bottom of the 10 fm. level: at the end of the word "north" is a period, which, of course, ends the sentence. In the second sentence, where the lode is described, it refers to the backs, and not to the lode in the end.

Your correspondent suggests that the reports were got up for the purpose of enticing capitalists to take shares; but I must beg to inform him that I will not lend myself to further such an object, or allow any one to use my name, but in a straightforward *bona fide* manner. I gave a separate report to Mr. Rankin, which he is welcome to publish, the truth of which I am prepared to defend. Thus, Sir, I have given you a brief statement of facts, and hope they will satisfy all parties concerned.—ROBERT DUNSTAN: West Caradon, Jan. 13.

PENTIRE GLAZE AND PENTIRE UNITED MINES.

SIR,—A remark in the *Mining Journal* of last week, under the signature of "Fair-Play," has been pointed out to me, in which I, as agent of the mine, am alluded to. The report, as presented to the meeting, I received, on Monday last, from Mr. Rankin, the purser. On the 21st of Dec. last, Mr. Rowlandson, Captain Dunstan, and myself, inspected the mines, and made a joint report thereon, a copy of which I have. As to the 22 fm. level, we reported as follows:—"The workmen are now driving north, where the lode is large, composed of floukan, prian, quartz, munda, and some spots of copper and lead; the backs of this lode are still stopping for lead, and yielding a small amount of

lead." The report presented to the meeting says, yielding 15 tons of lead per fathom. And as to the new or middle lode, which was reported by us to have been opened on to the extent of 30 fms., 28 fms. of which is productive ground, yielding, at different places, from 1½ to 2 tons of ore per fm., the report, as presented to the meeting, says—"This lode has been opened on to the extent of 30 fms., 28 fms. of which is productive ground, yielding 1½ to 2 tons of ore per fm." There is also a little difference in the latter part of the reports. Our report reads thus:—"Judging from all the appearances connected with this mine, we are unanimously of opinion that any large profits cannot be anticipated without driving to the northward, and at lower levels, where there is the greatest probability that a very large amount of lead will be found." The report, as presented to the meeting, says—"Judging from the general appearance of the mine, and carefully weighing all circumstances connected with it, we are unanimously of opinion that by driving northward, and at deeper levels, there is the greatest probability that a large amount of lead will be raised, and very considerable profits realised." On the above I shall make no remarks, but leave it with Capt. Dunstan, who is also alluded to by "Fair-Play," to act as he may feel disposed in this affair, who is, doubtless, well able to answer for himself; and as to "Fair-Play," he may draw from it what inference he may think proper.—WILLIAM BISHOP: Jan. 15.

PENTIRE GLAZE AND PENTIRE UNITED MINES.

SIR,—Among the "Notices to Correspondents," in your Journal of last Saturday, I observe you insert some grave and serious charges made by a person, anonymously styling himself "Fair-Play," St. Minver, against the present adventurers in these mines; and though you considerably give me the opportunity of disproving his statements, in doing so you yourself seem to question whether the reports read at the meeting were Capt. Dunstan's or not, although "put forth as such!" and, "if not," you say "you have no doubt that gentleman would disown all connection with them!" It does not say much for the credit of the mining world when you, who have had so long an acquaintance with it, can suppose for one moment that a set, or clique, should meet together as a constituted body, and impudently and unblushingly send for publication reports which they not only believe to be untrue, but which are positive forgeries! What ever may have been done by others, has not in this, nor in any instance, been done by us; and I thank you for inserting the statements of your correspondent, in order "that the truth may be elicited."

First, in reference to the genuineness of the reports themselves: I have already exhibited at your office the ORIGINALS, signed by the respective parties who were employed to inspect the mines. They were ordered for the satisfaction of the adventurers, and those interested in the mines, as well as to confirm the reports and the efficiency of the past workings of their captain, and "not got up," as your correspondent slanderously suggests, "for the purpose of enticing capitalists to take shares, and thus ease the shoulders of the present adventurers, who are few in number!" "Fair-Play" may often have "got up" reports for such purposes himself; but we would not attempt to ease our own shoulders by such base and dishonourable means. The reports in the handwriting of Messrs. Rowlandson and Dunstan, from which the printer set up the type (a rough proof of which I forwarded to you, and from which, I regret to find, as I have been since informed by Capt. Dunstan, in the second paragraph, on the new or middle lode, the compositor has omitted, after "yielding," the words—"in different places," &c.), are in my possession, and may be seen and compared with those published by "Fair-Play," or any other party, or parties, who may feel disposed to favour me with a call at the office, any day between the hours of 11 and 3 o'clock for that purpose. Having done all I can to prove the authenticity of the reports—viz.: by offering the originals to the inspection of those who doubt their validity—I proceed to the statements said to be made in, or inferred from, them by the doctile and intelligent "Fair-Play." He says—"that he is informed by working men that they have not got a stone of lead in any part of the 22 fathom level."

No working man, who spoke the truth, could say otherwise; and if the joint report of Rowlandson and Dunstan appears to convey that we have lead ore in this level (22 fm.), "Fair-Play" has only to exercise a *modicum* of his scrutinising powers, to find that such a statement never was intended to be made; for the inspectors, when speaking about this very 22 fm. level, in connection with the slide, say, "though it would not be prudent to put the 10 fm. level through the slide," "in the 22 fm. level we consider this may be done with safety, which level is now driving northward from the engine-shaft, in order to arrive at the ore ground gone down to the bottom of the 10 fm. level, which we anticipate will be reached in about four months from the present time, it being 38 fms. distant, in the course of which there is a fair probability of meeting other ore ground." The report, then, clearly cannot mean that there are any stones of lead in the 22 fm. level; indeed, the shaft has only just been sunk the additional 12 fms., from which this level is now being driven, in order, it says, "to arrive at the ore ground," &c. Your correspondent again informs you that, "according to the report, the new or middle lode ought to produce 50 tons of lead ore per month." This is, I suppose, another misapprehension, for I cannot, nor do I think any sensible man can, draw such an inference from the words of the report, though I confidently hope, under other management, to extract as much as, or perhaps more, than 50 tons of lead from this lode per month. I am pleased to see he admits our having raised 30 tons in the last two months, though he is ungenerous and ungracious enough to insinuate that it was done with more than common exertion. From the fact of your correspondent knowing so much about these mines, one would almost suppose he was connected with them, and, one way or other, was smarting under some reproach, or disappointment, in return for which he was now spitefully and maliciously attempting to fasten odium upon the present adventurers, by making it appear they were endeavouring to deceive the public. If "Fair-Play" is the person I suspect, he has a very bitter pill to swallow, and had better look to his own affairs than trouble himself to write what he knows to be false.—THE PUSHER: Tokenhouse-yard, Jan. 15.

P.S.—Since writing the above, I may as well inform you that our captain has resigned.

SOUTH MARIA MINE.

SIR,—Observing in your Journal a letter last week, respecting South Maria Mine, from Mr. J. Seccombe, of Tavistock, I have to state that he was purser of the late company, who have not worked the mine for the last 15 months; consequently, it has become forfeited to me, as the proprietor of the land; there remains six years of the old lease, and I have granted a fresh one to a new company, who are about to prosecute the mine with vigour. I deem it right to give this information to the public, that they may not be deceived, in purchasing that which is of no value. WILLIAM STEPHENS, Lord of South Maria Mine.

Latchley, Jan. 13.

TINCROFT MINE.

SIR,—On referring to the valuable list in your last Journal, by W. H. Cuell Esq., I find that 38,972. worth of ore has been sold during the past year from the above mine, whilst the only dividend has been one of 3150l. It is true that upwards of 9000l. worth was sold since that dividend was declared; but even then, the expenses appear enormously out of proportion to the dividends received. Whether this arises from the want of more frequent general meetings, and, consequently, more control by the shareholders, as in the case of cost-book mines, requires to be explained. A SHAREHOLDER.

THE MINING SHARE LIST.

SIR,—I fully agree with your correspondent, "Mentor," in last week's Journal, as to the difficulty of referring to your Share List, as at present arranged. I have now to search over four districts for mines I am interested in; but my greatest difficulty is to find out other mines, which may be referred to in your Mining correspondence as presenting favourable indications in the workings, and which naturally draws attention to the prices at which they are quoted, but, without a thorough knowledge of the districts, cannot now be found, except by referring alphabetically to each list, until the name is met with. If arranged as suggested—viz.: "Mines in Cornwall, Mines in Devon," &c., it would be much simpler, and, I think, give your readers (what you intended they should have) greater facility for reference. A SUBSCRIBER.

Wells, Jan. 13.

SIR,—I am a constant subscriber to your Journal, and solely on account of the prices of mining shares, to which I make constant reference, being a considerable investor in that description of property. The alteration in the last two Numbers has, however, totally destroyed all facility of reference in that respect, and without any corresponding advantage. The district was sufficiently indicated for all common purposes in the old plan. In many cases it is the last thing considered—the price being the first. Now there are a dozen different headings to look through before one can ascertain the price of shares. I hold shares in nine or ten mines, in none of which have I ever felt any interest to know the exact situation of. To look in the Journal for the prices of all these is, under the new system, a work of considerable intricacy and labour; and I feel confident that to the public the alteration must be productive of as much trouble and annoyance as to

SIMPLEX.

[Some remarks on these communications will be found in another column.]

WHEEL GILL (silver-lead and copper) is situate in the parishes of St. Cleer and St. Ives, in the neighbourhood of Trelawny, Wheel Mary Ann, and Trehan, and it is asserted with similar rich lodes of silver-lead running through a portion of the sett. The description given of the capabilities of the sett is most encouraging, and no large amount of capital, it is estimated, is needed to make the mine a paying one. The cessation of the former operations was owing to the want of steam-power—an event not likely to occur under the present adventurers, who have purchased a 70-inch cylinder steam-engine, of sufficient power to carry down the mine 200 fms. The full advantages resulting from the previous 10 years' workings, and an outlay of 15,000l., have been secured by the present company for 1500l., with a reservation to the owners of the sett of 536 shares, according to the conditions of the cost-book. The reports of Mr. Evan Hopkins and Capt. Joseph Kemp, who were expressly commissioned to inspect the mine, are fully confirmatory of the favourable opinions given relative to the property. The general character of the formation, says Mr. Evan Hopkins, is a variegated clay-slate, traversed by numerous light blue clay veins, and presenting every indication in structure, configuration of the valley, and the gossan for making large bunches of lead ore in depth, but more especially southward. This is, as regards lead, a most important sett, and deserving immediate attention, and although it predominates in lead and zinc, yet large masses of copper ore may be found westward, within the limits of the sett. Messrs. Seymour, Spargo, and Taylor, who had gone over the sett, in a letter to the shareholders, say—"We earnestly recommend you to fork the mine immediately, you will then have a profitable mine;" and Messrs. Richards and Kemp state expressly that there are three lodes running through the sett, one east and west, or copper lode, and two north and south course, or lead lodes, adding—"From what we have heard and seen of the old mine on this lode, together with the two lead lodes, and the work already done—viz.: shafts sunk, levels driven, &c., we consider Wheel Gill a fine speculation." It is, we see, divided into 1536 shares, a great portion of which, it is stated, have been already taken up by respectable parties.

BRITISH MINES.

ALFRED CONSOLS.—We expect in the early part of next week to resume the sinking of Field's engine-shaft under the 80 fm. level, and at the same time commence the driving of the 80 fm. level, east of said shaft. The lode in the 70 fm. level east is from 8 to 10 ft. wide, worth for copper ore about 50l. per fm. No. 2 winze is sunk under the 70 fm. level near 7 fms.; but cannot be sunk deeper until the 80 fm. level is extended further east to drain the water. The lode in this winze is about 4 ft. wide, nearly all solid ore, worth from 60l. to 80l. per fm. The lode in the stopes over the 70 fm. level is 10 ft. wide, worth from 140l. to 160l. per fm. The lode in the winze sinking under the 80 fm. level, west of Wyld's shaft, is from 10 to 12 ft. wide, worth quite 150l. per fathom. Wyld's shaft, by the end of the present working month, will be completed to the 60 fm. level, which will be a great advantage to the mine for ventilation and drainage. In driving south in the 10 fm. level, east of Wyld's shaft, we have not yet intersected the Oak Tree lode, but expect to do so in about one month from this time. Our north lode in the adit level, west of engine-shaft, has much improved in appearance within the last fortnight; it is nearly 1 ft. wide, and composed of spar, munda, and capels, mixed with copper ore. Our tribute pitches are just the same as for the last two months past. We are sorry to inform the adventurers of these mines that on Wednesday, the 8th inst., the boiler at the steam-whim exploded, destroying nearly all the boiler, and killing one man; the boiler was quite new, not having been in use more than about five weeks. The cause of this misfortune is not yet really known.

BARRISTOWN.—Since the meeting of the 4th December we have driven 8 fms. in the cross-cut south, through a very kindly channel of ground for mineral, and have had some cheering indications, such as a vein of lead, prian, and spar, all of which we report to the shareholders. The ground at present is still of a promising character, though a little stiffer for driving than it has been, and even now the present price is only 2l. 15s. per fathom, which may be considered moderate ground. The end east has been driven about 11 fms. on the course of the lode, and, owing to its unpromising character and irregularity, it has been considered judicious to suspend it, and the men have been put to drive west on the same lode; the same is at present small and worthless, and I would suggest for your consideration that this end be suspended for the present, and the men removed to drive in the direction of what is termed great slide west. The slide I refer to is almost at right angles with the old lode, and such a slide having made a good lode of lead between the old lode and black ground, bounded on the east for about 3 fms. in length, I think it a fair and just speculation to cut through the foot wall of the old lode, and drive in the same direction as the slide made one between the old lode and black ground referred to; and it will prove if such is to be found in such a course; and to make sure of it being there or not, after driving a few fathoms west we can drive south, should it be heaved in that direction on the old lode. This to me seems an important point, and one which justifies a trial, and should such a slide be found in that direction as a continuation of the other, there is no doubt of its being found productive. It is a trial which can be accomplished in a short time, and comparatively at a trifling expense.

BEDFORD UNITED.—The lode in the 115 fm. level, east of engine-shaft, is 2½ ft. wide, composed of spar and munda, with spots of ore in places; at the same level, east of Andrew's winze, the lode is 2½ ft. wide, and without alteration; ditto west, the lode is 3 ft. wide, producing a little saving work, but not rich. The lode in the 103 fm. level east is still worth 10 tons of ore per fm. In the 90 fm. level east, the lode is 2½ ft. wide, composed of spar, munda, and ore, yielding some saving work; in Arcot's winze, in this level, the lode is 3 ft. wide, and will produce 10 tons of ore per fm. In the 80 fathom level, we are driving by the side of the lodes. The pitches remain much the same as for some time past.

BODMIN WHEEL MARY CONSOLS.—We have set the shaft to sink from the 10 to the 20 fm. level, in one stent, to 16 men, at 7l. per fm. In the 10 fm. level we have now three lodes intersected, each containing small branches of ore, and stones of ore throughout; we have set to drive upon both ends of each lode, at an average price of 25s. per fm., and 2s. 6d. in 12l. for ore saved. In the cross-cut north we have driven 2 fms., and expect to cut No. 1 lode next week. In Hoskins's pitch, in the adit level, as they get nearer the surface, the lode is not quite so rich for ore, but is larger and composed chiefly of a most beautiful gossan.

BORRINGDON PARK.—Since I last saw you, we have met with a cross-course in the adit level dipping east, and, in consequence of there being so much water coming out against us, which proves a considerable drawback to us, we have breasted up the end, and resumed the sinking of the shaft and cutting the pit this morning, and shall, if possible, get through with it by the time I mentioned. I like the appearance of this cross-course dipping towards the comb.

CALSTOCK UNITED.—The tribute pitches at Wheel Goodluck are much the same as when last reported. The ends have been extended several fathoms both east and west in the 28 and 42 fm. levels, and are looking well. The engineers will commence heaving in the steam stamping engine on Monday next. We are actively employed on our southern lode, and shall make 200l. profit this month from this department.

CEFN BRUNO.—The sinking of the whim-shaft is suspended for the present, and preparations making for driving a 24 fm. level on the ore ground, through which the shaft has been sunk. The adit level west is at present in a small lode, with a little ore, and much water coming from the end; ditto east, is in a lode 20 in. wide, producing good stones of ore. The lode is not yet cut in the deep adit level, but some small strings of spar have been met with, with spots of lead.

CWM ERFIN.—The sinking of the engine-shaft is recommenced. The 30 fm. level east is still yielding 15 cwt. of ore per fm.; the rise and stope over this level continue very good. The 20 fm. level east is still poor, but contains a little ore; the stope over this level is still ore, with a large lode.

EAST CROWDALE.—I am happy to report to you the important discovery made in our 40 fm. level east; the lode is 5 ft. wide, having a leader of tin 14 in. wide on the south wall, producing full 60 per cent. of black tin, or 2½ tons of black tin per fm.; we have driven about 3 feet on its course, and up to the present time it holds good, and most productive in the bottom of the level. This looks well for our next level (the 50). No lode taken down in the 50 since my last. In the lode in the winze below this there is no alteration to notice.

EAST DAREN.—A very good ore lode is coming in at the east end of Taylor's shaft, but enough has not yet been seen to calculate its produce. The 20 fathom level, east of Field's shaft, is also in ore again; the same level, going back north-west is still in good ore. The winze below the 10 fm. level is yielding 2 tons of silver-lead ore per fm.; the 10 fm. level east is yielding about 8 cwt. per fm.; the last 2 fathoms yielded 15 cwt. per fm.

EAST WHEEL GEORGE.—I mentioned in my last that we had put the men to cut in south in the present end of the 12 fm. level east of shaft. In doing this we find the main part of the lode is standing, which is about 4 ft. wide, composed of capel, spar, and occasionally good stones of ore; it is a strong champion lode, which promises to turn out better in depth than at this point. The stopes are producing about the same quantity of ore—viz., 16l. worth per fm.; the ground is harder. In sinking the engine-shaft, we have nearly drained all the water from the 12 fm. level east, which makes it rather difficult for sinking. I hope we shall get the shaft down to the 24 fm. level in about a fortnight, when we shall drive and ease down the shaft, and commence driving a cross-cut, to intersect the lode immediately at that level. Our last parcel brought 12½ cwt. per fm., the amount being 258l. 15s. 2d. Our next sampling will be at Sowwell; we have commenced drawing ores to that quay.

EAST WHEEL JOSIAH.—There is but very little done in driving the adit end south this week, the ground in which being so very soft and troublesome; consequently the men are obliged to go back and new timber the level, to make it secure.

EAST WHEEL LEISURE.—Taylor's shaft is down for a 10 fm. level; it continues in a very fine killas. The winze on the north lode is cleared 7 fms. below adit; the first 4 fms. will pay well for taking away in the west end. The east end has been worked out. The adit west on Taylor's lode is 4 ft. wide, producing 1 ton of ore per fm.; in this level east the lode is 2½ ft. wide, rich for jack, but with little ore. The 17 fm. level, east and west, is in a promising lode.

EAST WHEEL RUSSELL.—We have completed the adit level to the engine-shaft, and cleared the former 6 ft. further east. We have also resumed sinking under the adit level; the lode produces the same quality gossan, prian, peach, quartz, and capels, and every indication of large quantities of copper ore below. We have not sunk many feet in Murchison's shaft this last week, having been overflooded with water; the lode here is also producing greens of copper, and it is my firm opinion that when we get under the gossan, we shall have an immense quantity of ore. We are getting on with our engine-house as fast as we possibly can, but the weather being so much against us, we shall not be able to set our engine to work so soon as we expected, although probably it will be ready in three weeks or a month.

ESGAR LEE.—We have taken down the lode in the deep adit, east of Morgan's winze; it is 3 ft. wide, with a strong mixture of ore throughout, but not so productive as might have been anticipated from its previous very promising appearance. The stratum at present is softer than usual, and of a very white colour. The lode in the 12 fm. level, east of Morgan's winze, is 3 ft. wide, looking kindly, and will, on an average, yield from 6 to 8 cwt. of ore per fm. The general appearance of the stopes is much as usual, yielding on an average about 1 ton of ore per fm.

HEIGNSTON DOWN CONSOLS.—Owing to an increase of water in the winze sinking below the 45 fm. level, attributable to the almost incessant rain, we purpose sinking on the north side of the lode until we reach a 35 fm. level, keeping, however, the north wall of the lode; and, so far as opened on, I am glad to say it looks exceedingly well. The lode in the 35 fm. level east produces occasionally stones of copper ore; the rise in the back of this level progresses satisfactorily; the cross-cut south is rather hard; it is, nevertheless, being spotted with fine yellow copper ore. The other points of operation are without important alteration.

HENNOCK.—We are fixing the rose lift, &c.; there is, therefore, nothing new that I can report since my last. We are now in the lode about 12 ft., without any material alteration; if any difference, the lode is a little softer. If we can have the castings up to-morrow, we shall commence sinking on Tuesday.

KIRKCUDBRIGHTSHIRE.—The lode in the 74 end, west of Stewart's shaft, is 3 ft. wide, making about 5 cwt. of lead to the fm. We have holed the 62 west from Keith's, to the 62 east of Gilpin's, this week. The 62 west of Gilpin's has a lode 4 ft. wide, yielding 5 cwt. of lead to the fathom. The lode in the 50 end west is 2 ft. wide, with stones of ore. The lode in the 40 end west is 4 ft. wide, with good stones of ore. We have shipped a cargo of lead in the *Mary* for the December gain.

LAMHEROE WHEEL MARIA.—The operations at this mine are progressing to my satisfaction. The 50 fm. level, east from engine-shaft, is driving by six men; the lode is 2½ ft. wide; the north part carries a leader of copper ore, 1 ft. wide, fair in quality; the south part is capel, spotted with copper ore, and still produces a fair quantity of tin. We have four men stopping in the back of the 60, east of engine-shaft, and intend to put on two men more to-morrow; the lode is 2 ft. wide, 6 per cent. black tin, and also produces a portion of copper ore. It is feasible to run a rise from the back of these stopes to the 50 fm. level; by so doing we shall raise a fair quantity of both tin and copper ore, and it will be available also for air, and when the water is in at the bottom level the men will be able to continue their labours some hours longer. The ends in the 60 fm. level, both east and west, are suspended for awhile. We intend to put two men to drive south in the 50 fm. level, to cut the lode west of the cross-course (the expense will be trifling), as it may be productive west of the cross-course, as it is to the east. We cannot say anything respecting the lode in Tab's shaft, as it has not been cut through for some fms.; it is intended to be done as soon as the men have completed their contract—that will be about the end of this month. Jesse's shaft, on B lode, is holed to the adit, and the new whim is in course of building, and will be completed by the end of this week; this shaft is sunk about 7 fms. below the adit above mentioned; the lode is about 5 ft. wide, composed of kindly munda, and gossan, spotted with copper ore, under which large veins of copper ore may be fairly expected; I trust we shall recommence sinking this shaft again about next Monday. As there is about 70 tons of tin work at surface, I

delade, Oct. 14.—Bo passed to receive a report of proceedings for September:—The wheel shaft is now 25 fms. 5 ft. 10 in. deep, and the cross-cut end west therefrom fms.; from the near part of the shaft we struck the flooken, or under part of the described in our last, at 21 fms. below the level of the cross-cut, and at 12 fathoms from the shaft, it is the same, and the same rocks are supposed. This supposition is strengthened by the position and bedding of the beds. The bed is 10 ft. 1 in.; also at B, in section No. 2. There is a branch shown in the plans sent home, not reported to contain ore; we have examined this by uncovering and blasting a part; it is from 8 to 14 in. big, and for a diameter of 5 fms. gives native copper, URPIUM, and a small quantity of iron.

of yielding native copper. We have discovered also a lode going north up the hill, as per plan No. 3, at C, with stones of green carbonate, which we now think, and which we hope, next month, to be able to positively assert as a canner to all our water-wheel flat lodes and branches; upon the whole, my desire is excited to speed down the shaft. I am sorry I cannot concur in the plan of further perpendicular sinking, as I believe the lode is fully arrived at. Besides, my reason is already advanced, there is another: the cutting through new strata downwards may prove an inlet to water, which the fookan has so happily contrived to restrain. In cutting through the lode south, at the end of middle gully, we have the best stones of ore yet discovered here; we have paid for 2 ft. 8 in., but are not yet through. I fully concur in stopping our driving here until we have a more specific object, having sufficiently proved a regularity, good size, and cupreous character, for nearly 40 fms. in length, at 8 fms. beneath the lowest bank, and (say) 1 fm. below the river's bed. The original specification of the engine erections are now complete, and the copies shall be forthwith ready for public inspection. The middle gully shaftmen have been employed in costaining and examining about water-wheel flat, and to prove whether there be one or two lodes passing at D, plan No. 3. It may be interesting to you to know there exists here, near the surface, sometimes indurated limestone, containing spiral, bivalve, and other shells, in a bed of softer lime conglomerate, some 8 or 10 ft. thick; under this a red and yellow ochreous sand, some 8 or 10 ft. more; near the bottom of which, 17 or 18 ft. deep, we found a bone (I think a rib) 4 or 5 inches long, in a high state of preservation, on the brow of a hill, 40 fms. above sea level: this deposit lies on the primitive lime rock of the country. I mention this as an element for geologists; it is, of course, under this we have to seek our lodes. The tops of the hills generally of the colony may be said to be capped with these maritime deposits, which, in this instance, makes our costaining expensive.—JOHN PHILLIPS.

SOUTH AUSTRALIAN MINING ASSOCIATION—(BURRA BURRA).

The half-yearly general meeting was held at Adelaide on the 16th October, when the following report was presented:—

The directors have the satisfaction of stating that their operations for the past six months have been marked with the same abundant success that has hitherto characterised the proceedings of this company.

The ore brought to surface during the last half-year exceeds 11,500 tons, including a quantity of low-produce ore, which could not be profitably raised previous to the arrangement with the Patent Copper Company, but the additional quantity will more than compensate for any deficiency in the average quality. The return of ore produced annually during the last five years, shows the raisings of the last year to have exceeded any other by nearly 50 per cent.; that of the last year being 18,692 tons, and the total raising for five years, 56,428 tons.

By the balance sheet, it appears that the profits acquired by the company from the 31st December, 1848 (the date of the last balancing), to the 25th September, 1849, nine months, amount to £7,058. 8s. 9d., and deducting rent and fees received, together with the balance of undivided profit brought forward, it leaves a profit on the 7789 tons of ore raised in that period, of 53,889. 19s. 9d., or 67. 18s. 4d. per ton, while the cost of producing the ore amounts to 72,511. 6s. 7d., or 92. 6s. 2d. per ton. So favourable a result as this has not been experienced since the years 1846 and 1847, when the ore was found near the surface, and consequently raised at a much less cost. The whole of the transactions of the company, from its formation to the 25th September, 1849, embracing four years and a half of the company's existence, and four years working of the Burra Burra Mines, have now been finally balanced, and the profits during that period amount to 229,535. 8s. 9d., of which 221,700. have been divided among the shareholders, in 12 dividends, and the balance, 7789. 19s. 9d., remains to the credit of profit and loss. The ore raised during this period was 37,736 tons, at a cost of 369,825. 3s. 6d., or 84. 4s. 3d. per ton, and produced in the province, free of freight and charges, 536,466. 10s. 4d., or 142. 4s. 4d. per ton—leaving a profit of 226,661. 6s. 10d., or 67. 18s. 4d. per ton; which, with 1874. 1s. 11d. received for rents, fees, &c., make the amount of profit above mentioned. In valuing the company's property, the greatest care has been taken to keep the estimates as near as possible. The ore and copper have been valued rather under the present low rates, so that in the event of a rise in price, the company will be in a much better position than is here indicated; at the same time, should a slight reduction take place, a margin has already been allowed for such contingency. Of the sum of 115,444. appearing in this statement as profit, only about 52,000. is applicable to dividends; the balance composed of the several items of land, buildings, stock, &c., although assets of the company, cannot be realised during its progress. In the statement showing the expenditure of the company for the 12 months ending 30th Sept. last, it will be seen that large sums have been disbursed for land, buildings, and stores, amounting to the sum of 48,508. 18s. 4d. The outlay in land purchased is so much value added to the company's property, while the large expenditure for stores will render it less necessary to purchase extensively this year; and as the principal buildings required for carrying on the mining operations are for the most part completed, or in progress, a much less sum will hereafter suffice for this department. The probability is, that half the above amount will be sufficient to cover these items in future years.

The present workings of the Burra Burra Mines consist of the following shafts, winzes, and levels:—45 winzes and shafts, of an aggregate depth of 812 fms.; seven trial shafts of an aggregate depth of 34 fathoms; 33 winzes and ladder-roads, of an aggregate depth of 270 fms.; 3676 fms. of levels, equal in length to four and one-third British miles. Excavation of the above, 30,185 cubic yards. The foregoing is exclusive of excavations for pits and pitches, and all shafts, levels, or other workings filled in, are not included.

The establishment at the Burra Burra Mines on the 30th Sept., consisted of 254 tributaries, 77 timbermen, 16 men timbering, two chief timbermen, one pitman, eight mine labourers—total employed underground, 358 men; 254 men and 74 boys dressing ore, 12 men weighing ore, eight ladders, 20 winch-boys, 20 carters, seven stable-men, 28 carpenters, three painters, seven stone-masons, seven masons' labourers, six smiths, six strikers, three engineers, two boiler-makers, one fitter, six engine and firemen, eight sawyers, 107 labourers, six mechanics, and others variously employed, eight boys ditto, 15 officers, two surgeons—total number employed at the Burra Burra Mines, 977. At Karkulito, one captain, 16 timbermen, one smith, one carpenter, two labourers—total, 21. Officers in Adelaide, five.—Total establishment, 1003.

The directors, in conclusion, have much confidence in stating that the affairs of the company are now in such a prosperous condition, that the regular payment of quarterly dividends may be relied on.

From Capt. Roach's report, it appears that the mines throughout never presented a more satisfactory and promising appearance. Kingston's lode in the 30 fm. level is 10 fms. wide, producing malachite and blue carbonate of copper, of the richest description. In Stock's 30 fm. level a lode has recently been cut 10 ft. wide, composed of the red oxide and quartz. Ayer's 40 fm. level yields malachite and red oxide, 40 to 45 per cent. produce. Graham's, Paxton's, Penny's, and Peacock's pitches are all in profitable working, and in excavating for the foundation of the winding engine-house a large and rich lode of malachite was discovered, from which 60 tons of 40 per cent. ore were taken at surface. The last sampling was 3854 tons of ore for two months' working. At the Karkulito Mine there is a strong champion lode running north and south, composed of iron and copper, not rich, but very promising; there are two other similar lodes, but as this mine is not yet developed, the captain will be able to report more fully at the next meeting.

On perusing the balance-sheet and accounts of the proceeds of these extraordinary mines, we find that the ore raised in six months, to 30th Sept. last, amounted to 11,901 tons, which, with the balance on hand, in March, 2229 tons, is 14,130 tons. Of this quantity 1420 tons were exported for sale, 1221 tons were sold in the colony, 5019 tons were delivered to the Patent Copper Company, and there remained on hand 6471 tons. The liabilities consist of—Capital stock, £12,320; sundries and unclaimed dividends, 161,129. 18s. 6d.—£173,449. 18s. 6d.; while the assets, estimating the estates at cost price only, amount to 288,803. 18s. 9d.—leaving a balance in favour of the company of 115,354. 9s. 3d. The total expenditure of the South Australian Mining Company within the colony in the year ending Sept. 30, 1850, was 244,456. 2s. 5d.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

OLD BRIMPTON (tin).—The captain reported, at the meeting of shareholders in November, that the men were driving a cross-cut to intersect the north lode, and his opinion was, that when the lode was cut they would cut a large bunch of tin. That opinion has been realised: one of the men, who has worked on Dartmoor for the last 20 years, says he never saw a richer lode. The captain calculates, by the time the men hole in the shaft, which is about 18 fms. (as they are now driving on the course of the lode), that the men will break 10 tons of tin. The lode is looking well in the shallow adit, which is nearer Brimpton's House, and the men are breaking excellent work for the stamps, which in the course of 10 days will be in full operation; and as there is a large quantity of tinstuff raised, the shareholders may soon expect a dividend. There has been about 17 per share expended, the mine being divided into 512 shares, but shares cannot be purchased except at a high premium.

WEST DING DONG.—The tinstuff raised this month will more than pay cost. The pitches are looking well, and every foot they sink in the engine-shaft the lode is improving.

WHEEL CARPENTER.—The adventurers have purchased a 32-in. pumping engine, with an 8-ton boiler, and agreed with their engineer, Mr. W. Matthews for taking it down and re-erecting it—the time allowed being four months in putting it to work. The indications of this mine are very flattering—good stones of lead having been broken within 10 ft. of the surface in the open cutting, and can now be broken at that depth from the lode, and at the depth of 10 fathoms in the cross-cut from the shaft. They have a large and kindly lode, producing fine stones of yellow copper ore, which can be seen at the pile on the mine.

FERNHILL WOOD.—This mine lies to the north-west of Bottle Hill, and contains parallel lodes of tin, held under George Strode, Esq., of Newham, divided into 1024 shares, on which 5s. has been paid, and 10s. called up on Thursday. There has been a great quantity of work done by the old miners on the lodes, of which there are known to be four. The principal operations have been on the middle and north lodes. We have sunk a new shaft between 10 and 11 fms., when we were stopped by water; purchased a 46-ft. wheel, pumps, rods, &c.; cut a new lead, wheel-pit, &c.; and expect that the wheel, pitwork, &c., will be in full work in about five weeks. In clearing for the rods, we found several old shafts and pits; and on examination we found that the whole of the northern lode of three in the south part of the sett has been carried off, as well as the middle lode, to the adit level at 12 fathoms; and we found a small lode gone down, but exceedingly good—rich enough to return a good profit. It is now intended to sink or continue the old shaft on this lode, and drive when about 10 fms. under the old workings; and the opinion of our agent (Capt. Edyes) is that we shall then be in a position to make a return.

GAER MINES (Montgomeryshire).—These mines are situated four miles west of Llanidloes, embracing the same lodes or range of veins now worked so profitably (on the east side) by the Bryntail and Pen-y-Clin Mining Companies, the sett of the former being only divided from the above by the Clewedog river, which forms the boundary, and the adit of both mines in contra direc-

tion east side of the stream. A second adit, also on the west side the bank, is in good progress, which from its extreme to the present workings must be estimated at not less than 1000 ft.; this to the full extent is spacious, and in a fine condition, with lines of iron tramroad for the transmission of the ore, attle, &c. One only of the three metalliferous lodes already discovered in this sett is being worked, which has sent off several lots of rich lead ore: the two remaining parallel ones have been proved to contain lead of equal value, specimens of which are on the banks. The setts are large, the royalty favourable, and with ever-flowing streams both sides of the bank being indispensably valuable in dressing and working machinery. These mines are situated on a ridge of the Penllyn range of mountains, in a stratum of killas (or clay-slate) formation, as well as in the centre of a rich mining district, where boundless wealth is continually being opened to view. These mines, although in infancy, possess encouraging features, and must, when brought to maturity, be viewed as a valuable investment to the proprietors.

WHEEL ENNIS (St. Erme).—This mine is held under a lease for 21 years, only six months of which is yet expired, at 1-18th dues. The sett is very extensive, being a mile from north to south and east to west. There are six known lodes in it, all of which have been wrought on, and each produced lead. An adit has been driven on the most westerly one, about 80 fms., and throughout this driving it presented the most favourable appearances. There is now a shaft sinking to take it about 20 fms. from surface, and on which there is a new 30-in. cylinder engine recently put to work. This lode is an extension of that which has been so productive at the celebrated East Wheel Rose—viz.: Middleton's lode; and from its appearance, as it has been seen in the adit lever, the adventurers expect a speedy return from it. The adventure is at present divided into 182 shares.

WHEEL HAMLYN.—The canter lode is much the same in character as last week. We are all very anxious to cut the great east and west lode, which we hope to do in two months.

WHEEL SARAH.—This mine is looking very well. We have taken down part of the east and west lode that we left against the north, where the grey ore is, and it is still looking better and larger.

DEATH OF CAPT. OLIVER H. MATTHEWS, F.G.S.—It is with sincere regret we have to announce the decease of this gentleman, which took place very suddenly from aneurism of the heart, on Sunday evening, the 15th of Dec. last. Mr. Matthews was well known to our readers, from numerous contributions. He was also a member of the Society of Natural History of Boston, Massachusetts, and was the superintendent of the mines and works belonging to the Quebec and Lake Superior Mining Company. He had had much previous mining experience in Cornwall, Spain, Cuba, and South America, and his extensive knowledge and amiable qualities endeared him to all his acquaintance, and obtained the highest testimonials of professional capacity and integrity from his employers.

FRENCH DUTIES ON ENGLISH COAL.—In the *Mining Journal* of the 4th instant, we inserted a notice of a meeting in Sunderland, at which an opinion was expressed, and resolutions founded thereon, that the present rate of duties on coal imported into France from England was highly injurious to the commercial and shipping interests of the north of England, and that the unequal manner in which the duties are levied has limited the intercourse between the two countries, and obstructed the natural expansion of trade. We are happy to find that the good example is being followed in other districts. The coal-trade of the West Riding of Yorkshire held a meeting at Normanton on the 9th inst., at which similar resolutions were passed; and a memorial founded thereon was drawn up and forwarded to Lord Palmerston, praying the interference of her Majesty's Government to induce the French Republic to remove a grievance so injurious to the property of both nations. These variable duties are on coals imported by sea into all ports between Dunkirk and Sable d'Olonne, 5 fr.; other French ports, 3 fr.; by land, 1½ fr.; and by the River Meuse, 1 fr. per ton. The duties upon coke are double the above; and the whole pay an additional 10 per cent. From these data the extra duty imposed on British coal can be easily estimated.

NEW MINING COMPANY.—It may be in the recollection of some of our readers that, some years ago, a company existed in this island under the name of the Mona Mining Company, and had opened works in the parish of Marown. That company, it appears, has been dissolved, and another, named the Tynwald Company formed, having secured a lease over the same district of country as that possessed by the first named company. The Tynwald Company, we learn, have commenced operations, and, as an essential requisite, have just landed at this port a powerful steam-engine and large boiler, for the purpose of erection on their premises.—*Mona's Herald* (Isle of Man).

A NEW GLASS AND IRON RAILWAY STATION.—On Thursday the Buckinghamshire Railway Company contracted with Messrs. Fox, Henderson, and Co., to erect a new station at Rewley, Oxford, which is to be constructed on the same principle as the building for the great Exhibition, and it is to be completed in three months. It is stated that this line to London is to be opened on the 1st of May next.

New Patents.

SPECIFICATION ENROLLED DURING THE PAST WEEK.

[In the *Mining Journal* of the 9th November last, in the weekly list of patents, it was stated that one had been granted to "B. Clark, jun.," for improvements in the manufacture of metallic casks. The patentee, it appears, was wrongly described: it should have been to John Clark, jun., of 21, Exchange-buildings, Liverpool. We regret this error should have subjected Mr. John Clark to so much inconvenience as we are informed it has.]

J. CONNOR, Hyde Park, gentleman: For improvements in melting, moulding and casting sand, "earth, and argillaceous substances," for paving, building, and various other purposes. Mr. Connor observes that he has discovered that part of his invention, which was to have been included under the words "earth and argillaceous substances" does not possess sufficient utility (*quere*, novelty?) to warrant his claiming its exclusive use; and that it is his intention to apply for leave to enter a disclaimer thereof. He then goes on to state that, although the melting of sand with various fluxes is a well-known operation in the manufacture of glass, still the application of this process to the formation of bricks, slabs, steps, mantle-pieces, pipes, tubes, inverters, and such like articles adapted for paving and building purposes, and for the conveyance of liquids under streets and through land, is new, and constitutes, in fact, the invention claimed by him. The methods of, and apparatus employed in such melting, casting, and moulding together the materials used (which are of the cheapest and commonest description), are in every respect identical with those practised and applied in the manufacture of coarse bottle glass; but as, in this case, transparency is by no means an object, the operation of "re-fusing" is dispensed with. While in a heated state, the articles (moulded into the desired forms) are placed in annealing ovens of the ordinary circular construction, with sand or cementing matter between them, to prevent them coming in contact. The temperature of the oven is then raised to a white heat, until the articles assume a dull brown colour, after which it is gradually reduced, when they will have become devitrified, and may be used as required. The patentee makes no claim to any of the above processes when separately considered, or when employed otherwise than for the purpose of his invention, which consists in the manufacture of articles for paving, building, and other similar uses, from sand, by melting, moulding, casting, and treating it in the manner described.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

H. Griswell, of the Regent's Canal Iron-Works, Middlesex, engineer, and T. Redwood, of Montague street, in the same county, professor of chemistry, for improvements in coating metals with other metals.
J. A. Archer, of the Broadway, Westminster, tobacco manufacturer, for improvements in the manufacture of tobacco.
S. Hall, late of Basford, near Nottingham, civil engineer, for improvements in the manufacture of starch and gums.
W. Melville, of Roe Bank Works, Lochwinnoch, Renfrew, North Britain, calico printer, for certain improvements in manufacturing and printing carpets and other fabrics.
T. Allan, of Glasgow, Lanark, North Britain, ironfounder, for certain improvements in paving or covering roads, streets, and other surfaces of a similar nature.
G. Anstey, of Brighton, Sussex, gentleman, for certain improvements in consuming smoke, and in regulating the draught in chimneys.
W. Robinson, of Holsheim, in Hildesheim, in the East Riding of the county of York, machinist and agricultural implement maker, for improved machinery for separating corn from straw.
J. C. Milnes, and S. Pickstone, of Radcliffe Bridge, Lancaster, manufacturer, for certain improvements in machinery or apparatus used in spinning, doubling, and weaving cotton, flax, and other fibrous substances.
C. Barlow, Esq., of Chancery-lane, London, for improvements in propelling; also for improvements in machinery for the manufacture of railway chairs.
A. S. Livingstone, of Swansea, Glamorgan, engineer, for improvements in the manufacture of fuel.
C. Cowper, of Southampton-buildings, Chancery-lane, Middlesex, for improvements in the construction of apparatus for manufacturing, and apparatus for retaining and drawing off soda-water and other aerated liquors.
R. Cogan, of Leicester-square, Middlesex, glass-merchant, for improvements in the application of plain or ornamental glass alone, or in combination with other suitable materials, to new and useful purposes of construction or manufacture.
F. Watson, of Moss-lane, Hulme, Manchester, gentleman, for improvements in sails, rigging, and ships' fittings, and machinery and apparatus employed therein.
C. W. Lancaster, of New Bond-street, Middlesex, gun-maker, for improvements in the manufacture of fire-arms and cannons, and of projectiles.
J. M. Taurines, of Paris, engineer, for certain improvements in the machinery and apparatus for measuring and regulating the working of engines.
G. A. Buchholz, of Agar-street, Strand, Middlesex, civil-engineer, for improvements in printing, and in the manufacture of printing apparatus, and also in folding and cutting apparatus.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

E. Upward, South Molton-street, respirator pipe.
Mary Ann Allison, Nottingham-place, Steppney, detector pocket guard.
T. Starkey, Birmingham, button.
T. Fuller, Kingsmead-street, Bath, London carriage body. [combining.
S. and F. Hattersey, Westbrook-Works, Bradford, eccentric cane, with joint for wool.
J. Mark, Exeter, machine for cutting lasts.
J. Paterson, Wood-street, polka collar. T. Clunes, Aberdeen, rotary pump.
L. Erling, Princes-square, ships' scuttle. [window-sash.
George Bodley, Broadway, Westminster, safety and ventilating revolving and sliding
G. Ellis, Fore-street, City, lady's fur cuff.—*Mechanics' Magazine.*

COMPANY OF COPPER MINERS IN ENGLAND.

Elsewhere we have alluded to a bill, about to be introduced into the House of Commons, for the purpose of facilitating the settlement of the affairs of the Governor and Company of Copper Miners in England, and for the better management of the association. The original charter was first granted the 8d of August, 1691, by William and Mary—there being at that time, as the charter states, "a want of skilful artists to refine and purify the great quantities of copper ore found in the kingdom, owing to which great sums of money were transmitted to foreign parts to pay for the same commodity. The parties who were then incorporated had found out several furnaces, engines, &c., and besought, therefore, letters patent to carry on the same as a joint-stock." On the 22d of September, the same year, these privileges were extended to Ireland; and on the 9th of February, 1711, Queen Anne further confirmed the letters patent granted by her predecessor. The shares, prior to the year 1741, were 7600, which were estimated at the nominal value of 13l. each. At that date, 2400 further shares were issued; and the stock of the company was then represented by 328,855. 11s. 8d. In 1746, a large sum of money was raised by the issue of preference shares and scrip at the rate of 25l. each—the holders receiving a preferential half-yearly dividend on that amount of 17. 17s. 6d.; this preference stock being represented by the sum of 281,300l. From time to time the court, having borrowed money on debentures, loan notes, &c., their debts now amount in the aggregate to 613,225l., inclusive of 150,000l. held by the Bank of England, and 115,000l. held by different creditors by way of security. On the 10th of October, 1847, the Bank of England advanced a further sum of 120,000l.—interest being paid on both at the rate of 5 per cent. per annum; at the same time taking a security mortgage on the whole property. In the year 1849, the case of Warner v. the Copper Miners' Company was heard in the Court of Chancery; and the same year the assignees of Thomas Bruton, a bankrupt, seized some of the property in Glamorgan-shire on account of debt. The Bank have twice attempted to sell the property; but being aware that by a forced sale not one-fourth of the value of the mortgage can be realised, they have offered to compromise with the company on advantageous terms. As the works cannot be efficiently carried out without a fresh issue of shares, it is requisite to apply to Parliament for the necessary powers. Numbers of poor and industrious people depending on them, it is prayed to afford facilities for prosecuting the works with activity. In order to avoid the difficulties which have brought the company to their present condition, it is proposed that auditors should be appointed to restrict the court from borrowing more than a certain proportion of the amount of their capital. The new bill proposes that the letters patent may be confirmed—that the Companies' Clauses Consolidation Act, 1845, with respect to the distribution of the capital of the company into shares, and with respect to the payment of subscriptions, transfer of shares, means of enforcing payment of calls, forfeiture of shares for non-payment, borrowing of money by mortgage bond, conversion of borrowed money into capital, consolidation of shares into stock, exercise of the right of voting, settlement of disputes by arbitration, &c., shall extend to the stock of this company. Three months after the passing of the Act, a meeting is to be held to elect a governor, deputy-governor, and court of assistants. A meeting of the debenture-holders and creditors to be held according to advertisement, soon after, to compute and arrange their debts—the debentures held by the Bank of England to be excluded from the computation. Mr. Wood, who has a claim of 2272. 2s. against the company, to be considered a creditor until the arbitrators of his debt have made their final award. Mr. Lord having entered into a suit of Chancery against the governor and court, to protect the interest of himself and the other shareholders, and to prevent the irrevocable loss of the property, the committee appointed the 4th of April, 1849, have arranged that his suit should be withdrawn on the payment of his cost, not exceeding a sum of 550l. Mr. Lord's claims for compensation for services rendered and outlay, are to be referred to the arbitrators under the Companies' Consolidation Act—the Governor and Court, who opposed Mr. Lord, both in the Vice and Lord Chancellor's Courts, having now approved of the recommendation of the committee. The stock is to be reduced in these proportions:—The holder of a debenture of 500l. to receive 250l. stock; preference stock, 500l., to have 125l.; and the old stock of 500l. to be considered as 622. 10s. The Governor and Court can raise by mortgage the sum of 200,000l., or such further sum, not exceeding the sum of 100,000l., as shall be fixed by a general or extraordinary meeting of the company. These preference shares to be first offered to debenture-holders and creditors. Should they not accept of this offer, they are to lose the benefit; in event of their accepting them, they are to be offered to stock-holders. Auditors are to be appointed at a general meeting of the company at an annual salary—no qualification being necessary. The number of assistants not to be more than ten. The company are not obliged to elect more than five; the qualification of the governor, deputy-governor, or assistants, to be at least 1000l. stock, paid up. One-third of the governing body to go out every year, but are eligible for re-election; so that the whole number must go out of office in three years. The company, acting by the governor, deputy-governor, or court of assistants, have power, under the common seal, to draw and endorse bills, and transact all necessary business. The rights of the Earl of Jersey, Christopher Talbot, Esq., and others, under whom the company hold lands and tenements, are not affected by this bill; but all leases to remain *in statu quo*, as if the Act had not been passed.

ACCIDENTS.

Aberystwyth, Jan. 16.—Yesterday, whilst the miners were in full work at the Belch Consoles Lead Mine, situated in the mountain near this place, a portion of the ground gave way and buried two miners, married men, under the falling mass. Immediately on the removal of the rubbish one man was found, but life was extinct; the other body has not yet been found.

Cook's Kitchen Mine.—As Francis Pascoe, a miner, was at work, on Thursday the 9th inst., a large rock fell on him. Upwards of half an hour elapsed before he was got out, seriously hurt, but hopes are entertained of his recovery.

St. Just.—A girl employed in dressing tin drank out of a bottle containing sulphuric acid used in refining the metal, mistaking it for water. By timely medical assistance the effects of the acid were arrested, and she is likely to recover.

Nealyn.—W. Jane, a miner at East Wheel Rose, fell down a shaft immediately after a blast, and is lying in a precarious state from the fall and the impure air.

Camborne.—A miner, named Thomas, fell while descending a shaft at Tin Croft Mine, and was so much injured as to render his recovery doubtful.

Derwent.—Joseph Collin, employed in the Derwent Iron-works, was killed by a stone falling upon him while at work.

Darlington.—W. Cadman, a boy 12 years of age, was found drowned in a pool of water in an ironstone pit.—John Hartland, aged 22, fell down the shaft of Messrs. Addenbrooks' coal-pit, and was killed.

Bilston.—John Wright, while at work in a pit belonging to Messrs. Sparrow, was killed by a quantity of stone falling upon him.—R. Westwood, in the employ of Messrs. Jones and Blackwell, died from the effect of injuries received while working in Dock Colliery.—A miner, named Bates, at the Birchills Old Field Colliery, was ascending the shaft in a skip, when from its not being stopped by the engine-man in time, the skip was pulled with violence over the pulley at the mouth of the pit, and the unfortunate man, losing his hold, was thrown on his head upon a heap of iron plates. He died of concussion of the brain the next day. Much blame is said to attach to the engine-man for not promptly attending to the signal.

Ynyscedwyn.—H. Williams was killed by an explosion at the Ynyscedwyn Iron-works caused by his imprudently carrying a naked candle to a dangerous part of the mine. Three other persons were severely injured.

St. Helen's.—Samuel Daniels was crushed to death by a waggon, at Blackbrook Colliery.—Michael McDonald was killed by a fall of coal at Messrs. Harding's colliery, and W. Shaw was severely burned by an explosion at the same colliery.

Wigan.—Thompson Abraham, a youth, 11 years old, was crushed by a train of waggons, and killed at Messrs. Ryland's Colliery.—An explosion took place at Messrs. Wright's Roundhouse Colliery. John Burgess and his two sons, James, 18, and George, 8, were severely burned—the eldest son dangerously.

Sunderland.—At the Black Boy Colliery an explosion occurred, which dislodged the props, and the roof fell on John Greener, the overman, and a boy named Hogg, who were taken out dead.

Jarrow Colliery.—Newton Taylor, a young man, was crushed between two waggons from the effects of which he died.

Another Colliery Explosion in Durham.—On Tuesday morning an explosion occurred in the Black Boy Colliery, about two miles from Bishop Auckland, which unfortunately resulted in the loss of two lives. About 2 o'clock in the morning some of the men had proceeded to work, when the overman and a boy entered a drift recently opened; they had proceeded upwards of a mile with naked candles, when it is supposed they had come in contact with a "blower," or pent-up quantity of gas, which exploded, and both were instantly killed by the blast. Happily, no other men were in the neighbourhood, otherwise the consequences must have been very disastrous. Mr. Matthias Dunn, one of the Government Inspectors, visited the colliery last week, and pronounced Black Boy Pit one of the best ventilated mines he had visited.

Steam Boiler Explosion.—On Thursday morning last, about half-past six o'clock, the boiler of the steam-engine at Holme-house Colliery exploded, with a fearful report, killing one man and one woman, and injuring others. At No. 3 pit there are two engines of 60 and 30-horse power respectively, supplied from three circular boilers placed between the engines. It was the newest of these which exploded, completely destroying the engine-house, and projecting massive pieces of the boiler 60 yards; bricks and timber were projected 300 yards from the spot. The engineers on duty had only arrived at six o'clock, when the night men left, and a fresh supply of water was being injected, when it exploded. On examining the remains, it appears evident the water had not been allowed to get too low, and at present no cause can be assigned for the accident. The deceased are Jeremiah Price, a lamp cleaner, aged 25, and Ann Turton, 35. A basket maker, the undertaker, and a woman, named Esther Whalley, were much injured by the fragments projected in all directions.

COLLIERY STRIKES IN DURHAM.—The colliers at Coxhoe, Durham, have been on strike for a week. The grievances of the men are described by themselves as arising from the dismissal of a weighman, who convened a meeting to ascertain who had and who had not paid into the Union fund. The dismissal took place for the above mentioned cause, they said, without the usual monthly notice. The men then struck work, and in consequence several were summarily ejected. The viewer states that the men lay idle on an entire morning, in consequence of the meeting called by the weighman. The result is known. It is supposed that the strike will extend indeed, a strike at the Washington Colliery was nipped in the bud by immediate ejectments. At the latest moment (says the *Durham Chronicle*) many men had returned to work.

Current Prices of Stocks, Shares, & Metals.

MINES.—An average amount of business has been transacted this week, and at higher prices generally for dividend mines. The tendency of prices is still to advance for all the leading and favourite mines of both classes, which can only be checked by monetary derangements, since every day is rendering this business more safe, and contributing to its steady advance in public estimation. There have again been some important discoveries, and improvements in several mines in the Devon and East Cornwall district, and new concerns, in consequence, are announced for public patronage. Capitalists will do well to be advised: we recommend, as usual, the utmost caution in investing in purely new concerns.

In the metal market, copper is steady, with a moderate amount of business.—Tin is very firm; an advance expected.—Lead fully maintains its rise, with a limited supply. A fair business has been done in spelter. Foreign tin and Tin-plates somewhat easier.

The Bryntail Mine sold 18 tons of lead ore, at 11l. 4s. per ton. The Herodsfoot, 75 tons, at 12l. 3s. 6d.; and the Tamar Mines, 73 tons, at 18l. 8s. 6d. per ton.—The Pentire Glaze Mines sold 30 tons of lead ores to the Tamar Company, at 10l. 9s. 6d. per ton.

The Foxdale (Isle of Man) lead ore, 100 tons, realised 12l. 11s. 6d. per ton, and the same quantity from the Newtonards Mines sold for 11l. 3s.

An immense piece of rich lead ore, weighing upwards of 25 cwt., was last week brought to surface at the Grassington Mines, Yorkshire. It is from Devonshire's vein, and an excellent specimen of the constituents, not only of that, but of lead veins in general, and as such will form an interesting feature at the Industrial Exhibition.

Two shipments of rich quality copper ore, about 800 tons, have arrived at Swansea, consigned to the Cobre Company.

The sale of black tin from the Mineral Court Mine realised 304l. 12s. 4d.

Important discoveries of rich tin ore are making in Wheal Vincent, in a level of 10 fms. carried under the stream works, now in successful operation; and the further development of the mine will, it is expected, be still more important, when the new shaft is sunk to 20 fathoms, and the lode driven upon.

The recent discovery in Rixhill is in the 40 fm. level, and about 40 fms. west of the western boundary of the United Mines, Tavistock, and is worth about 130l. per fm. It can be cut deeper than discovered, from the 20 fm. level in the United Mines, and all the lower levels can be brought forward in a very short time as deep as the 90.

A valuable discovery is reported at East Crowndale, in the 40 fm. level east, the produce of the lode in which is stated at 60 per cent. of tin, and worth from 120l. to 130l. per fm. It is most productive in the bottom.

From the recent inspection of Tregorden, it appears that the lode in the 30 fm. level is large and very promising, being rich also in some places for silver-lead ore, and has in general much improved lately.

In Old Polberro, according to the report, the lode in the ground above the 27 fm. level has considerably improved within the last few days. The month's produce of tin is estimated at 25 tons. Four pitches have been set on the copper lode.

At South Josiah a fine branch of copper ore has been discovered in driving the adit level west.

At Wheal Penhale an important discovery has been made in opening on a new canter lode, intersected in the 30, which is worth 40l. per fm. The Merilyn agent's report is highly favourable; and the returns of ore will, it is stated, exceed the previous calculations. From one pitch alone more than 15 tons of ore have been broken by the men during the week.

A company has been formed for working the Weston Lead Mines, situated in Salop and Montgomeryshire. But little expenditure, it is anticipated, will be needed to develop the resources of the mines. The first meeting, to determine on future operations, will take place on Monday.

At the Alfred Consols meeting, on Monday, the accounts for the two months showed—Balance from last account, 419l. 17s. 3d.; ores sold (less dues), 337l. 0s. 8d.; sundries, 64. 18s. 1d. = 3797l. 16s. To costs and merchants' bills for Oct. and Nov., 1392l. 18s. 8d.—By dividend of 8l. per share (2048l.), leaves balance carried to next account, 356l. 17s. 4d.—It was resolved that the future supplies to the mine should be subject to the list of prices charged in the Great Consols and the United Mines, as far as may be practicable. From the agent's report the several ends continued equally valuable with the previous week, and the several tribute pitches equally productive and promising.

At the Great Consols Mines meeting, on Wednesday, the accounts for Nov. and Dec. showed—Balance from last account, 2127l. 17s.; ores sold (less dues), 5677l. 16s. 9d.—7805l. 13s. 9d.—Mine cost and merchants' bills, 6533l. 10s. 1d.: leaving balance in favour of adventurers, 1272l. 3s. 8d.

At the Wheal Comfort meeting, on Tuesday, the accounts showed—Balance from last account, 487l. 19s. 1d.; ore money (less dues) to Oct. 24, 1398l. 15s. 9d. = 1886l. 14s. 10d.—Costs and merchants' bills for August, September, October, and November, 1617l. 2s. 9d.—leaving balance in favour of the mine, 269l. 12s. 1d.

The Herodsfoot accounts, as made up for the three months ending Nov., show—Lead ores raised in Sept. and sold in Oct., 929l. 11s. 6d.; raised in Oct. and sold in Nov., 950l.; ditto Nov. and sold in Dec., 913l. 2s. 6d.; copper ores, 40l.—2832l. 14s.—The costs for Sept., Oct., and Nov. were, (including dues, &c.), 2691l. 7s. 6d.: leaving profit of 141l. 6s. 6d. The statement of assets and liabilities show—Cash in hand, 300l. 12s. 9d.; arrears of calls, 17l. 10s.; value of copper ores raised in November, 40l. = 355l. 2s. 9d.—Dues, 148l. 2s.; doctor and club, 40l.: balance of assets over liabilities to end of November, 170l. 9s. In these accounts, the manager explains that the dues charged are for four months, making a difference on the debit side of 45l.; and also the expense incurred in the erection of a new boiler house, 30l.; and also 90l. charged in November cost towards the new boiler. Divesting the expenditure of these items, as not forming a part of the actual cost, but for permanent works, and as an addition to the plant, the real amount of profit on the three months' workings would be over 300l.

At the West Wheal Friendship meeting, a committee was appointed to adopt measures to carry out the recommendations of the mine agent, among which was one that a new shaft be sunk to cut the lode in the 43 fm. level at greater depth. The water has been drawn out to the back of the 43 fm. level. A call of 1l. per share was made, in order more effectually to develop the mine, in accordance with the views of the agent.

At the Great Wheal Baddern meeting, held at Manchester, on Wednesday, the accounts showed—Balance last meeting, 1068l. 13s. 3d.; mine cost for two months (including merchants' bills, &c.), 1407l. 2s. 2d. = 2475l. 15s. 5d.—By lead sold (less dues), 1240l. 9s. 2d.; mundic, 91l. 1s. 7d.; tin, 94l. 4s. 4d.—leaving balance against company, 1050l. 0s. 4d. The prospects of the mine (the old Bissoe Bridge) are said to be very encouraging, and it is expected the balance will be paid off in two months.

At the Kingsett and Bedford meeting, on Monday, the accounts showed—Receipts on calls, 276l. 4s. 9d.—By balance last account, 342l. 2s. 4d.; labour cost Oct., 77l. 16s. 10d.; Nov., 97l. 8s. 4d.; ironwork, 36l. 18s. 9d.; sundries, 20l. 18s. 6d.—the payments balancing the receipts. There was still a balance due the pursuer, of 30l. 4s. 9d.; and arrears of calls due, 117l. It was resolved that Capt. Michael Martyn should inspect and report on the mine for the satisfaction of the shareholders. The report stated that the lode in the south was most excellent, and if it continued, large quantities of ore ground would be laid open. The floors were full of lead ore for dressing, and everything promised well.

At the Crane and Bejaws meeting, the accounts showed—Balance against adventurers Oct. 30, 963l. 2s. 6d.; costs and materials for Sept. and Oct., 843l. 17s. 6d.; paid last moiety of cost of engine, 475l.—2382l.—By call made in Oct., 1536l.: leaves balance against adventurers 846l.

At a meeting of the North Trefusis adventurers, at Redruth, it was resolved to work the piece of ground which comprises Wheal Sparrow and East Wheal Sparrow, under a committee of management, consisting of W. Richards, W. Richards jun., R. H. Pike, F. Pryor, and J. Little. A call of 1l. per share was made, the mine being divided into 256 shares. Richards was appointed manager, and T. R. Hearle pursuer.

At the Kirkcubright monthly meeting, on Tuesday last, the accounts showed—Lead ore sold, 430l. 6s. 1d.—Mine cost for Dec., 380l. 4s. 7d.: leaving profit on the month's working of 50l. 2s. 4d. The statement of assets and liabilities showed—Liabilities, 203l. 5s. 1d.—Assets, 40 tons of lead ore shipped on the 11th inst. (the cost of which had been paid), valued at 430l., and a sum due to the company of 100l.—530l. The report stated the lode in Stewart's shaft, in the 74 end west, to be 3 ft. wide, worth 5 cwt. of lead per fm.; and in the 62 fm. level, west of Gilpin's, 4 ft. wide, yielding 5 cwt. per fm.

At the Wheal Union meeting, the accounts showed—Balance from last account, 462l. 12s.; costs and merchants' bills from June to December, 991l. 7s. 11d. = 1453l. 19s. 11d.—By ores sold (less dues), 35l. 14s. 9d.; call made in May last, 630l.: leaving balance against mine, 768l. 5s. 2d.

At the West Phoenix meeting, the accounts showed—Cash received, 1100l.—Paid for deeds, 29l. 0s. 6d.; cost sheets, for August, 40l. 19s. 3d.; Sept., 43l. 13s. 6d.; Oct., 70l. 4s. 11d.; and Nov., 117l. 6s. 6d.: lessees on account, 30l.; sundries, &c., 284l. 6s. 2d.: leaving balance in favour of adventurers, 484l. 9s. 1d. A call of 1l. per share was made, to meet the expenses of building engine-house, and other necessary works.

At the Devon and Courtenay Consols meeting, the report of the committee appointed to inspect the western ground of the sett, was received, expressing a strong opinion as to the desirability of working the lodes, to which attention had been previously called by Capt. Rickard, and also recommending that a large water-wheel should be put up. The accounts showed—Balance at last account, 55l. 13s. 3d.; mine cost for November, 120l. 0s. 7d.; December, 116l. 9l. 3d.—292l. 3s. 1d.—By last call of 5l., 258l.—leaves balance against adventurers, 34l. 3s. 1d. It was resolved that the number of shares should be 4160, instead of 1040, and a call of 2s. per share was made, to meet the estimated expenditure of the next two months. The report of Capt. Rickard, read to the meeting, expressed the fullest confidence in the result of a vigorous prosecution of operations in the western part of the sett.

The accounts submitted at the Trethrey meeting, showed a balance against the company of 33l. 8s. 8d.—Mine cost for Oct., 122l. 14s. 9d.; for November, 258l. 5s. 4d.; advance on account of engine, 250l.; sundries, 34l. 7s. 1d.—665l. 7s. 2d.—By balance in hand, 282l. 18s. 6d.; arrears of calls, 124l.; received on call due in Dec., 220l. 10s.; cash in advance of call, 4l. 10s.—leaving the balance against the mine as stated. A call of 1l. per share was made. Capt. Seymour, in his report, states that the engine-shaft was now 8 fms. below the 30 fm. level, but the influx of water was very great, in proportion (he says) to the size of the lode. He is sanguine in his impression that a large deposit of copper ore will shortly be met with, and that the mine will ultimately be one of the best in the neighbourhood.

At the West Shepherd adjourned meeting, held on Tuesday last, the accounts showed—Capital account, 1994l.; calls, 552l. 10s.; cash expenses of deputation, 27l. 3s.; to sale of ores, 357l. 5s. 2d.; interest, 7s. 6d.—2931l. 6s. 5d.—By labour cost and merchants' bills, 2862l. 7s. 1d.; interest and commission, 57l. 12s. 10d.: leaving balance in hand, 11l. 6s. 6d.

The accounts of Lamheroe Wheal Maria have been audited by Messrs. Ruston and Price, by whom the balance-sheets, from May 30th to Jan. 2d., were examined and found correct, showing a balance of assets in favour of the mine (not including the December cost-sheet) of 184l. 6s. 1d. The total sum expended, since the commencement of operations in 1845, is 20,409l. 13s. 2d.; and the receipts on calls, &c., 20,674l. 19s. 3d.

At the West Alfred Consols meeting, the accounts presented a balance against the mine of 956l. 14s. 5d. The particulars of receipts and expenditure have not reached us. To meet the above balance, and for the further prosecution of the workings, a call of 1l. per share was made. Capt. Michell was appointed agent of the mine.

The intended general meeting of Bryn-Arian adventurers has been adjourned till next week.

A reference to our Share List will again show a large amount of business done in the course of the past week. Some fluctuations will be observed on a comparison with previous prices, but in few instances is the difference very great, the recent advances being well sustained by our present quotations.

At the adjourned special meeting of the Company of Copper Miners in England, on Tuesday, Mr. Young, the solicitor, stated that the debenture holders had met, and the result arrived at was, that a committee should be formed to co-operate with the shareholders, in order that the bill to amend the constitution of the company should be forwarded in its several stages through both Houses of Parliament; that committee had been appointed, which consisted of Messrs. Joseph Hoare, Francis Edwards, Jansen, and Beattie, who at the same time undertook to raise a subscription to defray the expenses of the bill. A desultory conversation ensued, with regard to the Shareholders' Committee, nominated in April, 1849; ultimately, it was resolved that a committee of shareholders should be appointed to co-operate with the debenture-holders, when the following gentlemen were nominated:—Messrs. W. Gilbertson, A. Fowler, W. H. Lord, and J. Paul; and it was arranged that a meeting of the joint committees should take place on Saturday (this day), to see what steps should be pursued in the present crisis of affairs.

In Foreign Mines, there have been transactions in Alten, Santiago, United Mexican, General Mining, St. John del Rey, Annotto Bay, Copiapo, National Brazilian, Imperial Brazilian, and Worthing; United Mexican being firm at 5l., and Copiapo having been done at 5l.

The Linares reports, from Messrs. Thomas and Curry, are of a satisfactory character. The pitch in Pozo Ancho, referred to in a former report, has been set at what is deemed a low price, equal to 23s. per ton. The lode in the level west of the winze is looking well, being worth from 2 to 3 tons per fathom, with good prospects of improvement. In Wilson's shaft, now 3 fms. below the 45 fm. level, a splendid lode is reported, worth 6 tons per fathom, and there is likewise a large and promising lode in Shaw's shaft, with a leader of lead, worth 1 ton per fm. The main operation now contemplated is the deepening of San Thomas's engine-shaft to the 55 fm. level, a work which it is calculated it will take five months to complete, but which is likely to be of great and permanent benefit to the company. The produce for Dec. was 130 tons, and the total ore in stock at Linares, &c., and on ship board, was 411 tons 4 cwt. A parcel of ore from these mines has just been smelted and sold at Newcastle, the produce being from 92 tons 16 cwt. of ore, 65 tons 16 cwt. 2 qrs. of pig lead, and 767l. 0s. of fine silver, and the amount of sale, 1297l. 13s. 7d. This is of no small importance to the interests of the company, since the gain amounts to full 5 per cent., compared with the plan hitherto adopted, of disposing of the ore by the usual ticketing.

The Imperial Brazilian advices report no change of importance with regard to the mines. The 24 fm. level had been drained, and further operations were in progress. Some boxes of work have been obtained from the bottom of the 14 fm. level, from the same shoot as that in the back of the 24 fm. level, and more was expected from the same sources. North of Wray's shaft a vein had been discovered, presenting an appearance of promise. A despatch of a later date states that the result of the last ten days' workings did not equal what had been anticipated—the stopes in the back of the 24 and bottom of the 14 fm. level, on the Big Pump vein, being very poor, from the splitting of the lode. It is intended to sink Gibson's shaft to another level, which, from the powerful machinery at command, was expected to occasion no difficulty. An improvement is reported in the adit level, north of Wray's shaft, where the vein is of a very promising character, and some discoveries of importance were hoped for near some old surface workings, abandoned by the natives, from inability to go any deeper. At Gongo, the produce from a small arch of ground was upwards of 4 lbs. of gold, and a searching exploration is going forward. The gold report shows the produce to be from Gongo, for 20 days' workings, 13 lbs. 17 dwts.: and from Bananal, for the same period, 5 lbs. 0 oz. 14 dwts. = 18 lbs. 10 oz. 11 dwts. Total from the two mines, from July 1 to Nov. 12, 135 lbs. 4 oz. 5 dwts.

A report from Cuiba, received by the National Brazilian Company gives a brief but encouraging account of the operations at that mine. An accumulation of 150 tons of stones had been made, while the immense stopes and the mine below were deemed to hold out the promise of a lucrative undertaking, when the workings were carried to a greater depth and length. At Hitchens's level, more than 4 fms. had been driven on the course of the lode, and the floors of stone present a good appearance. The produce for ten days' workings, from October 27, was 3 mks. 4 ozs. 7 dwts. 38 grs. No report has been received from Cocaeas.

By the letters of the Royal Santiago Company, we learn that the chief operations are still confined to the Perseverancia Mine, where Thompson's shaft has been sunk to the 22 fm. level, the lode being between 5 and 6 ft. wide, yielding 8 tons of ore per fm. They had commenced to drive east and west from Thompson's shaft, and the produce at several of the levels varies, according to the report, from 3 to 4 tons per fm. In San Joaquin, the sinking of Taylor's shaft below the adit level had been impeded, in consequence of the water. At Ermitano all the copper had been extracted with removal. The produce for the preceding month had been about 120 tons, and the expenditure \$10,635.

The Worthing Company's advices, given elsewhere, detail the operations for Sept. last. The water-wheel shaft, it appears, is now 25 fathoms deep, and the under part of the lode had been struck 21 fms. below the level of the cross-cut. Some of the best stones of ore yet discovered have been found in cutting through the south lode at the end of middle gully. Several branches were found to yield native copper, and many good spots of ore, and a lode is spoken of going north of the hill, which is supposed to be a caunter to all the water-wheel flat lodes and branches. Further operations are in progress for testing the resources of the mine. In concluding his report, the inspector mentions as an interesting fact for the

geologist, that indurated limestone exists near the surface, containing spiral, bivalve, and other shells, in a bed of soft lime conglomerate; some 8 or 10 ft. thick under this is an ochreous sand, near the bottom of which has been found a bone, believed to be a rib, 4 or 5 inches in length, and in perfect preservation. The surface of the hills generally are said to be capped with these maritime deposits.

By the Overland Mail we received the ample documents presented at the meeting of the South Australian Mining Company (Burra Burra), full particulars of which will be found in another column, the report showed that the profit from the formation of the company, to 29th September, 1849 (4½ years), was 229,535l. 8s. 9d., of which 221,760l. have been divided among the shareholders, and 7775l. 8s. 9d. remains to credit. During the working for nine months, to 29th Sept., the profit realised on 7789 tons of ore raised, was 53,889l. 19s. 9d., or 6l. 18s. 4d. per ton, the most favourable result since 1846 and 1847, when the ore was found near the surface. Of the entire balance in hand, 29th Sept., 1849 (57,055l. 8s. 9d.), the 11th and 12th dividends of 200 per cent. were paid, amounting to 49,280l.—and leaving in hand, 7775l. 8s. 9d.

We also learn, that the exports of lead and silver ores were greatly on the increase, and the Glen Osmond group of mines exhibited increasing spirit and perseverance in working. The subject of connecting the port and city of Adelaide by railway was again being agitated. Mr. J. H. Paddon, a civil engineer, was drawing attention to the valuable iron ore in the colony, which he states to be inexhaustible, and found in districts containing an abundance of timber. He states that every ton of Australian iron, smelted by charcoal, would be worth 2 tons of English iron smelted by coal, and at the same cost, but the attention of the inhabitants appears to be too much absorbed in the copper and silver-lead riches, to think of the manufacture of native iron. A fine course of ore had been discovered in the Royal Mining Company's last purchase, at Enu Springs, in the shaft, 8 fms. from surface. The discovery of coal in Doubtful Island Bay was likely to be made available. The exports of copper from Adelaide have been, in 1850, 700 tons, against 35 tons in 1849. Prices of shares—Burra Burra, 201l. to 203l.; Princess Royal, 25l.; Phoenix, 75l. to 100l. premium.

HULL, THURSDAY.—Messrs. T. W. Flint and Co. state the amount of business done during the week has not been to any considerable extent. Tramways are about 21l.; Wellingtons, 16l.; with dividend; St. Aubyns, 5l.; East Gunns Lake, 22s. 6d. to 27s. 6d.; Trefusis 17l. to 18l.; Guatavus, 6l.; West Tolgus, 71l.; West Providence, 62l. to 65l.; Bedfords, 62l. to 63l., ex div. There is a growing feeling in favour of mining shares in this district, but many thousands in the aggregate have lately been invested in these securities, which has caused a fall for the present. Railway shares have been bought about the usual extent, but there has been an absence of anything like speculation in this department of the share market.

LATEST CURRENT PRICES OF METALS.

LONDON, JANUARY 17, 1851.

ENGLISH IRON.	per ton.	per lb.
Bar, bolt, & square, London	45 10-5 15	8d
Old copper	10 10-5 15	8d
Yellow Metal Sheathing	8d	
Foreign Copper	7 13-5 5	
South American, in bond	77 0-87 0	
ENGLISH LEAD.	per ton.	per lb.
Pig	10 10-5 15	0
Sheet	15 10-5 15	0
Pipe	19 0-0 0	
Red lead	19 0-0 0	
White ditto	24 0-0 0	
Patent shot	20 10 0	
FOREIGN LEAD.	per ton.	per lb.
Spanish, in bond	17 0-0 0	
ENGLISH TIN.	per cwt.	per lb.
Block	4 3 0	
Bar	4 4 0	
Refined	4 9 0	
FOREIGN TIN.	per cwt.	per lb.
Banco, II. C.	4 5 6-4 6 6	
Ditto, for Export only	4 4 6-4 5 6	
TIN-PLATES.	per box.	per lb.
IC Coke	1 8 0-1 8 6	
IC Charcoal	1 13-1 13 6	
IX ditto	1 14 0-2 0	
SPELTER.	per ton.	per lb.
Plates, warehouse	16 2 0	
Ditto, to arrive	16 2 0	
ZINC.	per ton.	per lb.
English sheet	21 10 0	
QUICKSILVER	per lb. 3s. 9d.	

Terms.—a, 6 months, or 2½ per cent. dis.; b, ditto; c, ditto; d, 6 months, or 3 per cent. dis.; e, 6 months, or 2½ per cent. dis.; f, ditto; g, ditto; h, ditto; i, ditto; k, net cash; l, 6 months, or 3 p. ct. dis.; m, net cash; n, 3 months, or 1½ p. ct. dis.; o, ditto, 1½ dis.; Cold-blast, free on board in Wales.

WELSH BARS are steady, and without any alteration in price. SCOTCH PIGS continue inactive, but steady; and as buyers hold off, and sellers do not press sales, but little has been done.

LEAD.—The market is firm at the late advance, and the supply short. FOREIGN TIN has been very firm, but the actual transactions not considerable; prices paid are, however, the turn in favour of the seller.

ENGLISH TIN.—Smelters decline selling, and will not name a price, except for very small lots.—TIN PLATES rather easier, but the demand good.

COPPER steady, and a moderate business doing.

SPELTER.—A fair business has been done at 16l. 2s. 6d.

GLASGOW, JAN. 16.—Since our last report the market for Scotch pig-iron has been quiet, and prices a shade lower. During the last two or three days, however, there appears to be a better feeling, and we have but few sellers of warrants for good brands, free on board here, and mixed Nos. under 44s. 6d. per ton, cash, and for shipment at 44s., payable against bill of lading; still some weak parties, unable to obtain an advance upon scrip, are obliged to accept rather low prices. The want of vessels continue to be much felt, and higher rates of freight are offered.

LEAD ORES.

TICKETINGS FOR ABOUT 100 TONS FOXDALE LEAD ORE.

Douglas, Isle of Man, January 15.

Bidders.	Price per Ton.
Sims, Williams, Nevill, and Co.—Llanelli (purchasers)	£12 11 6
Tamar Smelting Company—Becalston	10 17 6
Thomas Somers—Bristol	11 6 6
Walker, Parker, and Co.—Dee Bank	12 10 0
Mather and Co.—Bagillt	11 18 0
Newton, Keates, and Co.—Bagillt	12 2 0
Pontifex and Wood—London	12 1 0
Locke, Blackett, and Co.—Newcastle	11 10 0

TICKETINGS FOR ABOUT 100 TONS NEWTONARDS LEAD ORE.

Douglas, Isle of Man, January 15.

Bidders.	Price per Ton.
Walker, Parker, and Co.—Dee Bank (purchasers)	£11 3 0
Tamar Smelting Company—Becalston	9 5 6
Thomas Somers—Bristol	9 0 0
Sims, Williams, Nevill, and Co.—Llanelli	11 2 6
Newton, Keates, and Co.—Bagillt	10 10 0
J. P. Eytton—Llanerchymor	10 5 0
Pontifex and Wood—London	9 17 0
Locke, Blackett, and Co.—Newcastle	10 12 6

Sold at Bagillt.

Mine.	Tons.	Price per Ton.	Purchaser.
Bryntail	18	£11 4 0	Newton, Keates, & Co.

Sold at Llanelli.

Mine.	Tons.	Price per Ton.	Purchaser.
Herodsfoot	75	£12 3 6	Sims and Treffry.

Sold in London.

Mine.	Tons.	Price per Ton.	Purchaser.
Tamar	73	£18 8 6	Tamar Company.

BLACK TIN.

Sold at Carvedras Smelting-house, on the 11th January.

Mine.	Tons c. gr. lbs.	Price per Ton.	Purchaser.
Mineral Court	4 14 3 19	£37 0 0	Darbus.
ditto	0 8 0 5	28 0 0	ditto
ditto	0 6 2 22	56 0 0	ditto
ditto	0 5 0 12	16 0 0	ditto

Total—5 tons 14 cwt. 3 qrs. 2 lbs.—Amount of money, 304l. 12s. 4d.

COPPER ORES.

NO SALE ON Thursday last, January 16.

Copper ores for sale on Thursday next, at the Royal Hotel, Truro.—Mines and Parcells.—Devon Great Consols, Wheal Josiah, Wheal Maria, Wheal Fanny, and Wheal Anna Maria 1612—West Caradon 357—Fowey Consols 236—Wheal Friendship 191—Poldice 141—Bedford United Mines 136—Wheal Maiden 24—Wheal Jewel 11—Wheal Mary Consols 5.—Total quantity of ore to be sold, 2613 tons.

Copper ores for sale on Thursday week, at the Royal Hotel, Truro.—Mines and Parcells.—Consols 571—Perran St. George 564—United Mines 497—Trevelick 145—Par Consols 302—South Caradon 2 4—South Tolgus 175—Trestellian 114—Treligh Consols 94—Wheal Mary 73—Wheal Ellen 66—Wheal Unity Consols 53—Wheal Busy 38—Wheal Henry 37—Gonamen 30—Carthew Consols 23—Wheal Penhale 6.—Total, 3322 tons.

At SWANSEA, for Sale January 21.—Cobre, 802—Cuba, 340—Santiago, 305—West Kawaw, 320—Knockmahon, 160—Kawaw, 104—Ballynoe, 42—Faringa, 40 = 2173 tons.

NOTICES TO CORRESPONDENTS.

In a few weeks we shall publish the commencement of a SERIES of PAPERS, to be continued weekly, detailing

**The History of Mining,
ITS RISE AND PROGRESS;**

together with NOTICES of the EARLY METHODS of WORKING; ANCIENT and MODERN INVENTIONS, with their subsequent IMPROVEMENTS; comprising also
A SKETCH of METALLURGICAL OPERATIONS,
from the EARLIEST PERIOD to the PRESENT TIME.

The Great Exhibition.

In the "MINING JOURNAL" will also be given a detailed description, with all necessary illustrations, of every object connected with MINING and ENGINEERING, which may be produced at the forthcoming Great Exhibition.

The Compendium of British Mining,

BY J. Y. WATSON, ESQ., F.G.S.

We have the pleasure to announce, that Mr. WATSON has consented to revise and correct, to the present time, his interesting EPILOGUE OF BRITISH MINES, for republication in our columns—the third portion of which appears in this day's Journal. In the "Compendium of British Mining," it will be remembered, the actual position of the different mines is accurately described, both as to capital and working.

At the end of each year, a copious Index is published, which renders the volume an interesting and valuable record.

"A Looker-on" (Truro).—Free shares, as they are termed, are a certain number set aside for the promoters of a mine, as part compensation for its value, or for any expenses they may have been subjected to in laying out ground, purchasing machinery, &c.—all of which may become available to the new company. The value of the free shares are regulated according to circumstances, being exonerated from payment of one, two, three, or more deposits, as the case may be, when they become liable equally with other shares, and equally entitled to dividends and other advantages. In the case of South Croft, it appears from the prospectus, that the owners are to have 144 shares, free from all calls, which, on the entire capital of 10,000*l.* being called up, or 8*l.* per share on 1250 shares, is equal to 1152*l.*; in addition to which a sum of 30*l.* per share on the 1250 shares is to be paid to the owners, 1875*l.*; together 3027*l.*—nearly one-third of the entire capital. It depends on the work done, the ore in sight, the machinery and property on the mine, and the judgment of parties about joining the adventure, whether this sum is exorbitant or otherwise. From Capt. Richards's report, it appears that, on pumping out the water, a large amount of copper left in the levels will be available for market.

"A Miner" (Camborne).—The paper descriptive of the Camborne District appeared in the Journal of the 24th August last.

WEST WHEAL FRIENDSHIP.—"A Shareholder" writes to inform us that the adventurers in this company are much indebted to Capt. Carpenter, of Wheal Anderton, who was employed by a large shareholder to examine and report on the mine, and the efficiency of the machinery. He suggested certain alterations, which were carried out, and the results verified the correctness of his views—the water being in fork by half-past two o'clock on Wednesday last. The able engineer of Wheal Maria was present for other shareholders, who was also appealed to, and fully confirmed Capt. Carpenter's suggestions. Our correspondent also says, that instead of 4000*l.* expenditure, as stated in our "Mining Notabilia" of last week, the cost to the present time has been between 6000*l.* and 6500*l.*

SPEARHEAD CONSOLS.—Sir: In reply to the managing agent, wishing me to meet him on the mine, I beg to say, that of my going to inspect, I offer to deposit the sum of 2*l.* if Capt. Carthew will do the same, that an independent agent may be appointed, who will give a correct statement of the prospects, and let the same be fully reported in your Journal: when, if the mine is as promising as reported in your paper of the 28th December, I will pay for the inspecting.—A MINER: *St. Just, Jan. 14.*

THE IRON TRADE.—"X. X."—The consumption of iron in England, in 1820, was 400,000 tons; in 1840, 1,000,000 tons; in 1845, 2,200,000 tons. The returns for 1850 have not yet been made.

"W. R." (Evesham).—Mr. Shillibeer, the undertaker in the City-road, had a few years since a patent domestic apparatus for supplying gas, the retorts for which were placed besides a kitchen range, and the premises were lighted by it. Messrs. Croxley, Sons, and Galsworthy manufactured, about two years since, for the patentee, a beautiful arrangement of apparatus for producing gas on any scale for domestic or other purposes, from oil, spirits of wine, waste fats, spoiled rum, or any hydro-carbon might be employed, and which was exhibited in operation at their premises, Emerson-street, South-west-bridge-road. Mr. White proposes to erect apparatus on a domestic scale for his hydro-carbon gas, and any gas engineer might be employed to erect the necessary works, as the economical production of gas for domestic artificial illumination is perfectly practicable on any reasonable scale.

"M. R." (Tavistock).—At least, there is much difference of opinion respecting the value of the sett. If false representations have been made, no matter by whom, it cannot be long before they are exposed. The fact of doubt having been raised, and the spirit of enquiry instituted, is a sure indication that truth must, sooner or later, prevail. We have little doubt that an authenticated report, from a competent and impartial authority, will appear in a week or two.

"A Shareholder."—It is certainly entitled to derive what comfort he may from the fact of the continuity of the Coburn Mines to those of the Royal Santiago, which, by the way, was not lost sight of at the meeting. It seems but a sorry satisfaction, nevertheless, if this proximity is productive of nothing better than the spectacle of their neighbours thriving better than themselves, which just now appears to be the case as regards the Santiago Company. According to Mr. Taylor, who was termed by the chairman the "mainstay of the board," the "perpetrators" of the character of a backgammon board, some squares being held by the Santiago, and others by the Coburn Company, only it unfortunately happens that most of the lackluster squares have fallen to the lot of the former. A metaphor is not quite equivalent to a fact; but it is our earnest hope that the Santiago Company will, in the end, contrive to hold possession of the right squares, when there is no doubt their affairs will come speedily round.

"W. R." (Leicester).—The subject has been already so fully discussed, that we do not feel disposed to open our columns to any further communication—certainly not at present.

VENTILATION OF COAL MINES.—We have received a communication from Mr. W. Radley, dated Paris, January 9, relative to the observations of "M.L.C.E." in our last week's Journal, on Mr. Radley's statement of a sudden influx of 1,500,000 cubic feet of carburetted hydrogen into a mine. Mr. Radley states, that he never notices replies from anonymous correspondents beyond their mere perusal; but if "M.L.C.E." will forward his name, he shall be satisfied of the writer's knowledge and experience relative to explosions.

We have been expecting the promised specimens of slate which "C. A. P." (Exeter) wrote as being on their way to our office. On their receipt, we shall have some remarks to make.

"A Dissatisfied Shareholder" should attend the next meeting, and endeavour to ascertain information on the points referred to. The question of salaries can certainly be better enquired into and arranged at a meeting than through our columns.

"G." (Loughborough).—There is no mode of proceeding under the Cost-book System by which the amount deposited may be recovered. If our correspondent has purchased, and had transferred to him, shares in an unproductive mine, with the opportunity of previous enquiry neglected, he must put up with the consequences. If any party, from interested motives, has wrongfully informed him as to the produce and value of the mine, and induced him to purchase valueless shares, his remedy is by action at common law.

"A Shareholder" (Colchester).—We are not answerable for the comparatively meagre account given of the proceedings of the Pennant and Craigwen Companies, as our correspondent will discover, on asking the directors why they preferred to hold a private instead of a public meeting. It may not be difficult, it is true, to ascertain what was done, but it would not be quite so easy to learn the why and wherefore of their decisions. There appears, however, no sort of obscurity about the main fact, which is, that more money was wanted, and that a fresh call was made to raise it. The reimbursement of the directors was one reason assigned for this appeal to the purses of the shareholders, and the other, the further prosecution of operations at the mine. Which had most weight, either as regards the directors in asking, or the meeting in granting the boon, might be hard to say, and seems now of little consequence.

"F." (Dublin).—We never interfere in the sale or purchase of shares. An application to any broker will meet proper attention.

The patentee of the metallic casks, noticed in the Journal of the 9th November last, was Mr. John Clare, Jan., of 21, Exchange-buildings, Liverpool.

"Inquirer."—No operation requires greater nicety for the attainment of the requisite accuracy, than the grinding and polishing of specula for reflecting telescopes. It is in truth the most difficult of all the processes of grinding and polishing for the production of form. The perfection of the refracting telescope is in a great measure limited by the difficulty of grinding and polishing the lenses to the correct spherical figure, but an amount of error that would be quite passable in the best lenses, would be altogether inadmissible in the specula of large reflecting telescopes—consequently, a very high degree of accuracy of form is essential, and at the same time a high polish is of necessity required to produce a reflecting surface. The ordinary difficulties of producing very accurate and highly-finished surfaces are also increased by the intractable nature of the alloy of which specula are formed.

"A Miner" (Liskeard).—Our correspondent could hardly have expected us to publish such a statement as that forwarded, without even knowing the writer's name.

"J. V." (Cheltenham).—Refer to the third volume of Mr. Charles Holtzapffel's work on "Turning and Manipulation," in which every kind of abrasive process is most fully described. In addition to the mechanical details, a great deal of information of much interest to those attached to such pursuits will be found in the work, which is hardly to be equalled by any other of its class for its amount of knowledge on these special topics, and the admirable clearness with which it is conveyed. The volume last published, treating solely of those processes which cannot be accomplished with cutting tools, cannot fail to comprise full information as to the particular process sought for.

We have a letter for "A Country Subscriber" (Lincoln), whose address we have mislaid; also one for "A Staffordshire Man," who some time since requested information on sinking, &c.

"W. N." (Holborn).—The price appears a very high one—more, in fact, than the appearance of the mine at all warrants. Apply to a broker, who will advise as to the best course to be adopted. We invariably recommend the strictest inquiry before embarking capital in any mining adventures.

"Amateur."—In all cases of cutting valuable gems, the principal object of the lapidary is to fashion the stone, so as to produce as much display as can be obtained without materially reducing the size of the gem, and this circumstance in great measure determines the manner in which it is cut. This is especially the case with the diamond, which is always found in the form of an octohedron, more or less perfect in form; and unless the diamond has defects, it is always cut as a brilliant, with an octagonal base, that being the largest regular figure that can be inscribed within the octohedron. Diamonds that have defects are split by cleavage, and the pieces are cut into rose diamonds, and which form is also adopted for those whole diamonds that are too thin to be cut into brilliants. Other valuable gems are in like manner cut into the largest regular forms they will respectively produce.

"B. S."—The improvement in the iron trade, of which the independent testimony borne from different quarters leaves no doubt, is not limited, as our correspondent will see by the published accounts, to this country, since a general activity pervades most branches of the iron manufacture abroad as well as at home. This is quite consistent, moreover,

with the fact of our increased exports, since these depend not so much on any alleged injurious rivalry, as on the general development of the resources of any country. Besides, the doctrine of protection is still held in high esteem, both among despotic states and in free and enlightened America; and our exports are not at present likely to create much alarm for the favourite system, which it is the delight equally of our German and American brethren to foster and uphold.

"We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, JANUARY 18, 1851.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

We would call the serious attention of our readers, particularly those interested in collieries, and still more earnestly the owners and viewer of the one under notice, to a communication in another column, on the dangerous position of the Jarrow Colliery, and the impending certainty of another destructive explosion at no distant day, if the present mode of blasting by gunpowder and using naked candles is persisted in. This colliery has for many years possessed an unenviable notoriety, as being one of the most fiery, and probably the worst ventilated, of any coal mine in the north; and that its owners and viewer should set at defiance all the urgent entreaties of their men, in their earnest pleadings for their lives, the recommendations of the Government inspectors, given after close inspection and mature consideration; and the warning of scientific experience, as certain of particular results as effect follows cause, appears such a wanton and wicked display of trafficking with the lives of scores of workmen, for a paltry pecuniary saving, as will astonish those who are unacquainted with the dangers the poor working colliery has to encounter, and the cupidity of some of our colliery proprietors, who would feel less affliction at the immolation of a hecatomb of victims than in the expenditure of a few pounds for the prevention of the catastrophe. In laying before the world the observations of "M." in the columns of the MINING JOURNAL, the parties accused have a warning, for the neglect of which there will be no excuse; and if the calamity predicted by our correspondent takes place, with the usual horrible and fatal results, we bid them beware! as we think no 12 honest and intelligent men could conscientiously return any other verdict, at least, than manslaughter—death, under such aggravated circumstances, morally amounting to wilful murder. The views taken by our correspondent are no dreamy theories; he is, from experience, well able to form an opinion of the matter; he states facts, startling naked facts! which no sophistry can invalidate, and no observations of ours alter or improve; and in closing these remarks, we would again recommend our readers to a careful perusal of his communication. There are, unfortunately, no penalties laid down in the recent Act for disregarding the recommendations of an inspector of Government, but flagrant opposition, such as is here described, will compel such an amendment of the Act, as shall place colliery owners still more securely within the pale and punishment of the law.

The returns from the different mining districts of the United Kingdom, and the intelligence obtained from the colonies, are now sufficient to assure us that the mineral wealth of our empire will be fairly and fully represented at the Great Exhibition. There is scarcely a locality of any note from which mineral specimens will not be forwarded; but it is still important for our miners to remember that it is desirable the three-volume catalogue should contain some notice of all necessary mines, particularly such as produce ores of any peculiar character, and this can only be secured by their having specimens in the Crystal Palace. The object of this large catalogue, which will be carefully annotated by scientific and practical men, is to exhibit, as in a directory, the localities from which any substance may be obtained, and every manufacturer from which any marketable material may be forwarded. We have seen a classification of the objects, which it is known from the vouchers will be found in the Exhibition, and from it we have extracted the following, as showing the great variety of objects connected with the processes of mining and metallurgy. It must be remembered that the first division is understood to include plans for improving the modes of working, and otherwise, as shown by drawings, models, &c.:

I. MINING AND QUARRYING.

1. Quarries and open workings.
2. Streaming—washing alluvial deposits.
3. Mines worked on the lode.
4. Sinking of shafts.—a. Raising sumps.—c. Cutting adits.—d. Driving levels.
5. Mines worked on the bed.
6. Sinking shafts.—b. Driving levels.—c. Cutting headings.
7. Salt deposits.
8. Hydraulic engines, steam-engines, and water-wheels, as employed for pumping, winding, or crushing.
9. Ventilation—safety lamps, and other modes of lighting.
10. Improvements in working.
11. Raising ore.—b. Lowering and raising miners.
12. Geological maps, models, plans, and sections of metalliferous and coal mines.

II. METALLURGY.

1. Methods of dressing and rendering ores merchantable.
2. Methods of roasting, smelting, or otherwise reducing ores.
3. The common metals, as iron, copper, zinc, tin, lead.—b. The metals more generally used in combination, as antimony, arsenic, bismuth, cadmium, cobalt, nickel, manganese, &c.
4. Methods of preparing and rendering merchantable the nobler metals, as gold, silver, mercury, palladium, platinum, &c.
5. Adaptation of metals to special purposes.
6. Metals in various chemical states, as iron in the condition of cast and malleable iron, steel, &c.—b. Metals in their progress to finished manufactures, as pigs and ingots, sheets, bars, wires, &c.
7. Alloys, and methods of rendering more generally useful metals and their alloys.—Statuary, bronze, gun, bell, and speculum metals.
8. Brass and alloys used as a substitute for iron.
9. White alloys, as Britannia metal, German silver, pewter, &c.
10. Type, sheeting metals, and other alloys.

III. NON-METALLIC MINERAL PRODUCTS.

1. Gems and precious minerals used for personal ornaments, or for mechanical and scientific purposes.
2. Minerals used as fuel.—All kinds of coal; lignite and peat; bituminous bodies and native naphtha.
3. Massive minerals used in construction.
4. For purposes of building generally.—Siliceous or calcareous freestones and flags; granite, porphyritic, and basaltic rock.
5. For purposes of ornament, decoration, and the fine arts.—Marbles; alabaster, spar, &c.; serpentine and other rocks in a polished state.
6. Cements and artificial stones.—Calcareous and hydraulic cements; puzzolanas; gypsum for plaster; artificial stones.
7. Minerals used in the arts and manufactures.
8. Simple bodies or compounds containing the alkalies or alkaline earths—those used principally for culinary purposes, or for medicine, salt, saltpetre, mineral waters, &c.—b. Earthy and semi-crystalline minerals—casting sands.
9. Casting sands.—b. Minerals used for grinding and polishing, as flints, honestones.
10. Earthy minerals used for pottery and glass.—Sands, limestones, &c., for glass-making.
11. Various clays and felspathic minerals, as those used for bricks, tiles, and other kinds of pottery and porcelain.
12. Graphite.—Lithographic stone.
13. Various other minerals, as alum, schists, fuller's-earth, &c.
14. Soils and mineral manures.

The copper ores of the kingdom appear to be well represented, as are also the lead ores of every locality, except Flintshire, from which the contributions promise to be very small. The loss will only be to the mine proprietors and lead smelters themselves, since the lead ores of the northern and southern portions of the kingdom will be largely

contributed, and every process of smelting very fully illustrated. To the mineral productions of South Australia and from Canada we have already alluded; we believe these will form a very attractive feature of the mineral department. It is very satisfactory to know that the Exhibition has given an impetus to discovery, and metalliferous ores and earthy minerals will be forwarded from many districts where their existence has not been hitherto suspected. We have reason for believing that it is not too late, if application is made in the proper quarter, still to obtain space for any interesting object connected with mining, mineralogy, or metallurgy.

The inquest on the bodies of the three unfortunate men who were killed at the Oldcastle Colliery, belonging to Messrs. Sims, WILLYAMS, NEVILLE, and Co., was adjourned, for the purpose of communicating with the Government through the SECRETARY OF STATE, as required by the provisions of the Act of Parliament, and resumed yesterday week, when the usual verdict, ready cut and dried, of "accidental death by the breaking of a chain," was returned—the coroner having informed the jury that the SECRETARY OF STATE, in his reply, stated that he did not consider it a case in which it was necessary to send down a Government official. It appeared, from the evidence, that one of the men, DAVID LONGHURST, sen., was an exceedingly tall man, 6 ft. 4 in. or 5 in.; he usually went up astride on the edge of the basket, one leg hanging out; this position made the basket hang sideways, and rendered it dangerous. There were two guide chains and a rope attached to the basket; one chain is supposed to have given way, and the jerk broke the other and the rope. The weight of the basket was 5 cwt., and with its then load could not have exceeded half a ton, and yet it was stated that the chains had, when new, been proved for 3½ tons. It is well known to engineers and ironfounders that the best made chains, with every link carefully proved, can never be depended on—some unsound portions from unexplained and undiscoverable causes, although they have stood proof, become defective in course of working, and these distressing and fatal accidents are the results. With wire rope comparatively few accidents from breakage have resulted; and when it is known to be not only safe, but in the long run decidedly so much more economical than ropes or chains, is it not a monstrous absurdity to persevere in the use of the most expensive and dangerous of two commodities? Here is also another instance where FOURDRINIER'S patent apparatus would have been the means of saving to their families three valuable lives; and a proof that as efficient means of avoiding accidents are within reach, these continual verdicts of accidental death are entirely misplaced and ill-timed: they should, at least, be qualified with severe remarks on the recklessness shown with regard to the safety of the colliery's life.

In another column will be found some remarks from two correspondents on the subject of the SHARE LIST—one from "A Subscriber," fully agreeing with the suggestions of "Mentor," published in the previous Number, of dividing all mines into four classes only, as "Mines in Cornwall," "Mines in Devon," "All other British Mines," and "Foreign"—the other from "Simplex," expressing a general dissent to the alteration from our old general alphabetical plan. We have received numerous other communications on the subject, some being favourable to the new plan, others sweeping denunciations against any change whatever. As a general reply to our correspondents, we can only say that we are by no means wedded to any particular arrangement—our object being solely to present the list, which has now become a formidable affair, and highly expressive of the increased confidence and interest in mining enterprise, in a form the most satisfactory, advantageous, and suitable to the majority of our readers, and shall eventually adopt as permanent that which appears to approach nearest to a unanimity of opinion, that it affords the most correct means of ascertaining the real value of mining property, and most facilitates the research.

It is perfectly true that only the practical and experienced, in mining localities, can at once know which district to apply to for any particular mine, and the alteration has received the unqualified approbation of such parties. We are aware that dividing between 200 and 300 mines into a dozen classes may have caused some difficulty of research to the inexperienced, but under the form adopted, it struck us forcibly that we were presenting the necessary information in a shape which would expressly teach those details which, to all interested in mines, we consider highly necessary to be known; and we cannot help feeling some surprise at one expression in the communication of "Simplex," that "he holds shares in nine or ten mines, in none of which he has ever felt any interest to know the exact situation of." Particular districts vary in the nature of the strata, mineralogical character, and geological formation; and although it is unwise, and risking too much, to purchase a stake in a new mine, merely because it is in the near neighbourhood of a productive one, or even on the course of the same lodes, unless explorations have given satisfactory indications, still, having ready means of ascertaining at a glance not only the district in which any mine is situated, but the particular group of adventures in progress therein, must, we believe, be not only gratifying, but advantageous to the majority of our mining readers. As we have, however, as before observed, not pinned our faith to the infallibility or perfection of any particular plan, it must be self-evident that the pains and trouble we have been at in revising the Share List has only arisen from an ardent desire to render it of real utility to the mining world, and satisfactory to "One and All."

In another column will be found a notice of the adjourned special meeting of the COPPER MINERS' COMPANY OF ENGLAND. From this it will be seen that a committee of shareholders has been appointed to co-operate with the debenture-holders in carrying the bill to amend the constitution of the company through the Houses of Parliament. This is decidedly a step in the right direction; but we would ask the question, why has not this same conclusion been arrived at long since? We may say, for the last five years, the affairs of the company have been in the most complex state; and though we are willing to accord all due meed to the late Shareholders' Committee in the arduous task which they undertook in April, 1849, yet the inquiry suggests itself, what has been the result of their labours? An abortive bill was prepared by them, which was so loosely worded, that it was rejected by the committee appointed to enter into its details, and report on its merits. Efforts were, we believe, made to reconcile the conflicting interests, but without any success, and the final has been that another committee has been nominated, to act with the debenture-holders. One of the shareholders, Alderman and Sheriff CARDEN, at one of their meetings, observed that he had sat on several committees of this company, and the result had been they had all ended in "smoke." So it has been with the last committee, of which, we believe, the worthy alderman was one, but never participated in the duties, believing it would terminate as he anticipated. Among the members of the new committee will be found the name of Mr. W. H. LORD. It may be remembered this gentleman opposed several of the proceedings of the Governor and Court of Assistants, and had recourse to law proceedings, which were opposed, tooth and nail, by the governing body. However litigious and contrary to law that gentleman's conduct may have been, results have shown that his complaints were based on equity, justice, and common sense; and we confidently hope that the energy he has hitherto displayed, at personal inconvenience and pecuniary risk, in behalf of the more supine shareholders, will be now exercised for the purpose of resuscitating the company. As soon as the property is cleared from its present incumbrance, and the proposed bill receives the Royal Assent, propositions, we are told, will be made to raise by subscription a capital of 300,000*l.* on preference shares and mortgage debentures, nearly the whole of which may be considered as working capital. The present establishments are now in good working order; the price of copper, and all other metals, are likely to rise; while the tin-plate department at Cwm Avon is in a most flourishing state—the make having risen from 1200 boxes per week to 2000. The old adage says—"Better late than never;" but we do think, had the disposition among the several interests to amalgamate been shown earlier, that it would have been better for all concerned, and that the profits now accruing would have been much more properly applied in a division among the shareholders than swelling the plethora coffers of the Bank of

England. The charter is too valuable to be lost. The company, for some time, has been nearly insolvent, and it has only been from the cause that the property, if sold, would not realise anything like its real value, that has prevented the creditors forcing it into the Court of Bankruptcy. If the bill to be introduced next session is passed, much will be done to assist the company to reconstitute itself. Without the strong and hearty co-operation of all concerned, this, however, will be fruitless: a determined will and united purpose is absolutely necessary; all petty differences must be merged, and we trust the joint committee will work to that end, so that we shall be able shortly to announce the complete renovation of the Ancient and Honourable Company of Copper Miners, in all its pristine vigour and extended sphere of industry. The destiny of thousands depends on their exertions; and we do not wish to record that these committees, as well as their predecessors, to use Ald. CARMEN's words, have ended in "smoke."

After the several futile attempts which have been made, during the past few years, to establish an association for the protection of patents, it gives us much pleasure to observe, from a prospectus now before us, that the subject has at length been warmly taken up by several gentlemen of eminence and influence in the engineering and scientific world, and that a body of patentees, and proprietors of patent property, is now formed into a company, under the title of "Association of Patentees and Proprietors of Patents for the Protection and Regulation of Patent Property." Among the promoters of this association, formed for the attainment of most desirable results, we find the following highly-respectable names, forming a committee for carrying out the objects in view:—

Alex. Allott, Esq., Lenton Works
C. D. Archibald, Esq., F.R.S., F.G.S.
P. Clausen, Esq., London and Manchester
Robert Davison, Esq., C.E.
Wm. Fairbairn, Esq., C.E., F.R.S.
Joseph Gibbs, Esq., C.E.
H. Henson, Esq., North Western Rail.

Sir Francis C. Knowles, Bart.
Henry Lund, Esq., M.A., Temple
Robert Plummer, Esq., Newcastle
Charles Pownall, Esq., Kensington
J. C. Robertson, Esq., C.E.
James Rock, Jun., Esq., Hastings
Jas. Thomson, Esq., C.E., Glasgow

The objects of this association are to promote, by the diffusion of information, by legislative measures and otherwise, the following reforms:—

1. The simplification and consolidation of the proceedings for obtaining patents.
2. The reduction of the expenses within safe and moderate limits.
3. An improved system of enrolment.
4. The readier verification of patented productions, and more summary redress for infringements.
5. International arrangements for a mutual recognition of the rights of inventors.

In the development of these objects, although the precise scheme of reform is reserved for further consideration and discussion, it is proposed under the first head to abrogate the whole of the present proceedings, generally admitted to be unnecessarily complex and multifarious, and to substitute in lieu thereof one single official act of the nature of an entry or record of the patent right, precisely similar to the entry of a literary copyright at Stationers' Hall. The practice of requiring separate patents for England, Ireland, and Scotland to be abolished, and one patent to suffice for the whole British Empire, including the Colonies and the East Indies, if practicable, which are not at present covered by patent. This patent to be granted on the inventor filing a specification of his invention, under his hand and seal, with a declaration that, to the best of his knowledge and belief, the invention is new and useful, and he is the first and true inventor. Consequently on this change would be the abolition of the practice of allowing six months after the date of the patent to specify—a practice which exists in no other country but England, and is a notorious source of fraud and inconvenience. Every person applying for a patent, and lodging the specification and declaration required, to be at once entitled to the patent, but always at his own risk—that is to say, subject to its after impeachment, in due course of law, on any of the three grounds—want of novelty, want of utility, and want of title. This is the practice now followed in France, and it is found to work well; also in Holland, Austria, and Spain. Instead of the present cost for the three patents for England, Ireland, and Scotland, 320*l.*, which if the colonies are included amounts to 430*l.*, it is proposed that one patent for the whole empire should cost, in lieu of all other charges, 100*l.* This sum would be sufficient to exercise due caution, without being prohibitory or oppressive. It is proposed that the Lords of the Privy Council retain the power they possess under the 7 and 8 Vic., c. 69, of renewing letters patent for any term not exceeding 14 years; but no sum to be payable on renewal, other than the fees attending the process.

According to calculations which have been made, and are in course of careful verification, the revenue from patents under this new system would be so much in excess of what they now produce, as to furnish an ample surplus fund, for the indemnification of all parties who may have vested interests in the fees arising from the forms proposed to be abolished under object first. An improved system of enrolment is also proposed—the specification to be printed instead of written, and the diagrams engraved; and the patentee to lodge with the signed and sealed specification 475 copies of it—20 to be sent to public libraries, 385 to parliamentary boroughs, 55 to the capitals of British colonies, and 15 to foreign Governments; and this without one shilling additional expense to the patentee, for it is capable of proof that the entire expense to which a patentee would thus be put for engraving and printing (including a reasonable fee—say, one or two guineas—to be paid to the keeper of the enrolment-office, for the trouble of himself and clerks) would not, on the average, exceed more than what he pays for specifying under the present most defective and unsatisfactory system. It is further suggested that all articles manufactured under patent to have conspicuously marked thereon, where practicable, the word "patent," date, and name of patentee. Penalty for default—forfeiture of patent right. Actions for infringement to be brought in the County Courts of England, Sheriffs' Courts in Scotland, and Civil Bill Courts in Ireland.

These proposed alterations and improvements are founded on just and fair principles, and are much in spirit in accordance with what has been advocated in our columns for several years past. The greater confidence inspired by these regulations, and the reduction of cost, would greatly increase the number of legitimate patents, and, in some measure, secure to the poor inventor those rights which, under existing practice, it is impossible he can obtain.

A subscription of one guinea constitutes any person—being a patentee or proprietor of patent property—a member of this association, with right to participate in all its proceedings, and to copies of its periodical reports.

Since writing the foregoing remarks, we have received from Mr. H. LUND, M.A., of the Temple, an outline of the proposed bill, and the following is an epitome of its provisions:—

1. That an office for registration of inventions be appointed.
2. That every invention, now patentable, be registrable at this office, upon deposit of an outline specification and the payment of 50*l.*; the full specification to be filed three months later, by the deposit of a certain number of printed copies, with explanatory engravings thereon—one copy to be distributed to every city, borough, or large town, to the capital of each colony, and to each foreign state. The inventor having complied with this, will have a patent right for seven years, without further charge or difficulty.
3. Specifications are to be classified and indexed.
4. Titles of registration to be published in the *Gazette*, and opposition to be allowed between prior and subsequent applicants. The 50*l.* to be returned to the rejected applicant.
5. Upon payment of 30*l.* the inventor to obtain seven years additional, and 20*l.* for a further term of seven years.
6. Registrations to be cancelled upon a direct proceeding, by order of a superior court, when proved to be invalid.
7. Proceedings for infringement to be in the county courts for England, and the local courts of Scotland and Ireland.
8. Assignments, licenses, &c., to be registered.
9. A report from the Patent-office to be laid before Parliament every year, &c.
10. In conducting the proceedings to cancel a registration, competent assessors, with or without a jury, are to be employed.

NEW PATENT LAW FOR BELGIUM.

The patent law reform movement, it appears, is not to be confined to the British Islands, it being proposed to alter the Belgian law of patents. A draft of this law has been forwarded us, which, as it may, at the present time, be interesting and instructive to our patent reformers, we now lay before our readers its principal distinctive features:—

1. Patents of inventions to be assimilated to all other kinds of property—enjoy the same rights, and support the same charges, &c.
2. Any one who wishes to obtain a patent must deposit, in a close sealed packet, such a specification, &c., as shall comply with the law, with the registrar of the province, or, if in a foreign country, with the diplomatic or consular agent. Before the application and deposit can be received, the patentee must pay to the public treasury the sum of 10 francs. Upon receipt of this deposit, the registrar is to note on the cover, and give an official certificate, as to the day and hour thereof. During six months after the date of the deposit, the patentee may make such changes, additions, and retrenchments, as he shall judge proper, provided that the subject-principal of the patent must remain the same. The legal date will be that noted on the deposit, and signified in the certificate thereof. All deposits must be transmitted to the Home-office, to be opened every six months. The

patentee shall be able to renounce the benefit of the six months' secrecy, and demand immediate publication. Every week the titles and dates, &c., of patents of inventions applied for shall be published in an official gazette.

3. The applications for patents, deposited as before stated, being delivered to the patent department at the Home-office, shall at the appointed time be opened by the proper officer; and if in due form, must be forthwith published in the *Gazette*, the patentees paying for the same at a fixed price—50 copies are to be set aside for the patentee for his licensees, &c. If the application is not in due form, or *contra bonos mores*, the officer may refuse to entertain the application in that form; but should the applicant demur, the matter must be laid before the Council of Prudhommes (men of science and practice), whose decision shall be final. During four months following the publication of the specification, &c., any person may oppose the concession of the patent for just cause. Opposition may also be made by the Minister of the Interior. The opposition is to be heard and determined finally by the Council of Prudhommes.

4. Patents, when fully made out, are not to be annulled for insufficient specification, &c., but only for non-compliance with the law on part of patentee.

5. The tax on patents is fixed at 10 francs, paid down, for the first year; 20 francs for the second, and so on increasing 10 francs each year, until the surrender of the patent. Every assignee and licensee must pay the same tax as the patentee, and either will surrender their rights by not doing so. The Government has power to remit all, or part, of the tax in certain cases.

6. The descent and transfer of patent property is to be regulated by the ordinary law, except that every change of ownership must be gazetted.

7. The invention must be put into work within two years, and must not be suspended for three years together.

8. Piracy and infringement are to be submitted to the Council of Prudhommes, who will, if the infringer appeared to be actuated by good faith, endeavour to amicably arrange between the parties; and if this cannot be effected, will cause sufficient reparation to be made; but if the infringer appeared not to be so actuated, damages will be awarded, and the confiscation of all the piratical articles, &c.; and this judgment is to be publicly notified. This judgment may be appealed against to the ordinary court of appeal.

9. Patents of improvement upon a patent will be granted on the usual terms.

10. Patents of importation, which will remain in force 25 years.

11. Patents for reviving or carrying out inventions.

12. Patents granted under the old law may, within the date of one year, be brought under the operation of the new law, at the election of the patentee. Old patents may be revived under certain circumstances. Patents now passing may also be brought under the new law. The nature of patentable invention is determined, and penalties are imposed for not marking every article as patent which is patented, and the fraudulent use thereof on articles not patented.

THE MONKWEARMOUTH COLLIERY.

In our last Journal we briefly alluded to the fact of the guardians of the poor of the Sunderland Union having represented the "pit heap" of waste coal at this colliery to be a nuisance to the inhabitants of the locality, and that steps were being taken by the authorities to compel its removal. If this removal is insisted upon at the sole expense of the owners, the cost will be enormous, and will raise the question whether it will not be the more profitable plan to suspend the workings altogether. As 1700 tons of coals are now raised daily, the continuous additions to the waste must be considerable; and we are only surprised that some arrangements have not been made, or means discovered of avoiding the pit heap nuisance at collieries generally, as spontaneous combustion ensues, and the nuisance even at a distance, in the direction of the wind must be intolerable. The establishment of a manufactory of some of the best patent fuels near a large colliery would, probably, consume all the waste, and at once abate the nuisance; at all events, it appears invidious to have selected the Monkwearmouth Colliery for this nuisance-abating experiment, and leaving all the others in the Union unnoticed. Considerable time should be given to enable the owners to adopt the best and most economic measures, more particularly as they have already, at very great expense, tried every known means without effect. The Monkwearmouth Colliery is the most interesting in the kingdom, perhaps in the world, as an evidence of the correctness and value of geological science. Its position is four miles beyond the eastern margin of the coal-field, and close to the sea at the mouth of the River Wear. Previous to the commencement of sinking, and for years during its progress, absolute failure was foretold by nearly all the coal viewers of the north; but, guided by the light of geological data, and convinced that the Bensham and Hutton seams dipped in that direction, in May, 1826, the shaft was commenced by the owners, 12 feet in diameter, and 87 feet above high-water mark. After 8½ years' hard labour, the first workable seam of coal was reached, at the depth of 1584 feet. In 1843, at a depth of 1674 ft., the Bensham seam was cut, but it was not until April, 1846, that the Hutton seam was reached, 4 ft. 10 in. in thickness; and thus after 20 years, with an outlay of 20,000*l.*, the Messrs. Thompson's geological deductions were found correct, and the value of the colliery proved. It is now 299 fms., or 1794 feet, from surface, and is, we believe, the deepest coal mine in Great Britain.

We are happy to learn, since writing the above, that at the last meeting of guardians the clerk stated that, in accordance with the resolution of the board, he had communicated with Mr. Bell, one of the owners, who had assured him that measures were being adopted for the suppression of the nuisance.

STAFFORDSHIRE COPPER MINES.

An action of trespass has been recently brought by the Rilage Mining Company, against the New York Mining Company, under the following circumstances:—These two companies are in Staffordshire, and their mines adjoin each other, and are only a few miles distant from the far-famed Eton Mine. The complaint of the Rilage Company was that the New York Company had, in the month of May last, entered the boundary of the former, and in the face of notice had taken ore to the value of 100*l.* To save expenses, the matter in dispute was referred to the arbitration of Messrs. Thomas Maddock, of Hanley, Staffordshire, mining surveyor; and Mr. George Knox, of Fenton, Staffordshire, mining agent, and they appointed Mr. Thomas Hall, of Castleton, Derbyshire, mining surveyor, as umpire. The arbitration meetings were held on the 7th and 14th November last; Messrs. Cooper and Co., of Congleton, were solicitors for the plaintiffs, and Messrs. Challinor and Co., of Leek, for the defendants. The fact of the trespass being committed, was proved by the evidence of several witnesses, and that it was within plaintiffs' boundary, and that the ore taken was worth from 80*l.* to 100*l.*, the average value of copper from the Rilage Mine, being from 8*l.* to 18*l.* per ton, deducting therefrom return charges. The answer of the defendant to the plaintiffs' case was, that no trespass had been committed; they conceded they had gone 2 feet within the Rilage Mine, if the wall on the surface, separating the two estates, was the boundary, under as well as above ground; but they contended that it was not the underground boundary, but that certain pieces of timber affixed underground were. The defendants also alleged that plaintiffs had acquiesced in the trespass, and lastly, that assuming the trespass to have been committed, the ore taken was not worth more than 10*l.*; and, in support of this last defence, some of the defendants, witnesses swore that none of the copper from the New York Mine was worth more than 6*l.* per ton, out of which return charges must be deducted; and one witness swore that none of the copper produced by the New York Mine was worth more than 5*l.* per ton, out of which return charges were to be deducted; and when pressed as to what the amount of those return charges was, stated them to be 5*l.* 2s. per ton. The evidence of this witness was strongly commented on, and it was asked how a concern could pay its way under such circumstances? The arbitrators not being able to agree, the umpire took upon himself the decision of the case, and has lately awarded 40*l.* as damages against the New York Company, as well as all the expenses.

CLEVELAND IRONSTONE WORKS.—The opening of the newly-discovered beds of ironstone at Eton, in the county of York, and of a new branch line of railway to the works from the Middlesbrough and Redcar line, took place on Monday week. A special train was provided for the occasion, attended by a brass band, consisting of musical workmen of Messrs. Bolckow and Vaughan, the proprietors. The company proceeded in this train about two miles from the trunk line, when they arrived at the foot of the incline leading up to the works, which are quarried at a height of 400 ft. above the sea level. The incline is 1000 yards in length, divided by a break into two lengths of 400 and 600 yards respectively, down which the loaded waggons rush at a fearful rate, drawing up the empty ones by iron wire ropes and pulleys. Having witnessed the ascent and descent of some half dozen of these waggon trains, the parties descended, much pleased with the morning's adventure. About 50 gentlemen sat down to a sumptuous repast at the Globe Inn, provided by Messrs. Bolckow and Vaughan, at which the greatest harmony prevailed, and among the opinions expressed in the various speeches made, Mr. Bolckow, in describing the advantages likely to result from the discovery, said, he looked forward to the time when Middlesbrough would become a second Birmingham, and other speakers supported such a prospect. The deposit of ironstone in Cleveland was first discovered a few years ago, and has been worked near Huncliff about two years, but from the expenses of beach, loading, and coasting freight, it has not proved of much advantage. From the position of the strata, Messrs. Bolckow and Vaughan, and experienced engineers, believed that the seam would be found in the neighbourhood of Eton, and a few months since the latter gentleman, with Mr. Marly, their agent, were exploring the hills, when examining a rabbit burrow, the ironstone was found 18 in. from surface. The ore is of first-rate quality, its minimum yield being 33½ per cent., though not so rich and so readily calcined as some of the Scotch ores; the seam is from 9 to 18 feet in thickness, and it is calculated that one square mile would supply the whole of the furnaces of the western districts with ironstone for a century. The machinery just completed is sufficient to supply 1000 tons of ore daily, and a large portion is now being used on contract by the Conssett and other iron-works. Such an inexhaustible bed of ironstone must not only prove of incalculable advantage to the population of the district, but to the iron trade of the kingdom.

Mr. Charles Egan, the Chancery barrister, and author of the *Status of the Jews in England*, is, we understand, writing a work on the antiquity and pre-eminence of the prerogative of the Crown of England in ecclesiastical matters. Irrespective of the interest arising from the late Papal aggression, we are pleased to find a recondite writer taking up this neglected, but important, theme, as a good book on the Royal prerogative is much required; for, strange to say, we have but one work written expressly on the subject in modern times (*viz.*, Allen's), and that was published many years since.

Original Correspondence.

AN IMPENDING EXPLOSION—JARROW COLLIERY.

SIR.—The efforts of men of science and humanity, nobly sustained by the Legislature and the press, have, within the last few years, induced great and beneficial changes in the working of mines; and the last legislative Act, in the appointment of mine inspectors, points to a future that will elevate the mining interest of Britain to a position becoming its national importance. Whatever stands in the way of the full and free operation of that judicious, though incomplete measure, if the Act itself contains no power to remove it, it is proper it should have applied to it the subduing influence of an enlightened public opinion.

In the unfortunate category of such an obstruction, stands at present the notorious *Jarrow Colliery*; and, while so placed, it is preparing a fresh sacrifice of human beings, to add another dark page to its bloody annals. That this is but too true, its history, its present condition, and legitimate deduction, as we shall see, too clearly demonstrate. In 24 years, this mine, or a portion of it, has exploded seven times, and killed 134 people. Its explosions occur, on an average, once in about four years. The last was in August, 1845, in which 40 miners perished miserably—some burnt to death in its flash, others literally shattered to pieces against the sides of the mine, and the rest poisoned in the most horrible manner; and now the period is at hand for another such catastrophe.

When I show the present condition of this mine, its mode of working, and the unusually dangerous processes to which it is subjected, the surprise will be that the catastrophe has not already arrived. Upwards of eight years ago the utmost ventilation in the main passages was little more than 3 ft. per second, which dwindled down in the boards to 1 foot and 1½ foot per second, 3½ and 1½ mile an hour. (*Shields Mining Report*, p. 34.) It may be imagined what it is now, with eight years' workings, and the low-main seam additional, with no additional means to ventilate it.

At that period, three years before the last accident, the record of these facts contained this startling warning:—"That the air thus struggling through these extended passages, where gas oozes at every pore, should become surcharged and explosive, is a physical consequence as clear as a mathematical demonstration. In such a system there is everything to encourage the production of an explosive mixture, just sufficient air to prepare in some neglected recess the combustible, not enough to dilute or sweep it away. Perpetually ready, on the slightest derangement of any of its machinery, it falls naturally at once into a vast arena of subterranean thunder, whose terrors a boy's finger can unloose." "This" said the *Economist*, looks like prophecy read by the light of the late explosion; but it is only sober science and common sense, tracing the necessary connection which subsists between cause and effect.

Let us again apply them. Dr. John Hutchinson, of London, who made some most interesting investigations in the northern mines, when examined before the Committee of the Lords, in 1849, is asked by Lord Wharncliffe (*Evidence*, p. 147—qy. 1447). "What mine are you speaking of?" answers, "I am speaking of Jarrow Colliery. There was, by way of ventilation in the mine, just the least movement of air, like as if it were a man gently breathing upon you, from the extremely constricted state of the shaft. When I was going towards that mine, I asked a miner, 'which is the way to Jarrow Colliery?' and he said, 'Sir, I do not know of any colliery; but there (pointing in the direction of the colliery) is a butcher's shop.' It was very distressing to see it, but more so to go into it." And Mr. Wood, the distinguished viewer, is asked by the same Lords' Committee "What is the present state of Jarrow?" we see that there are frequent accidents there," and says, "That is the same seam: it is the Bensham seam, and it is an extremely fiery colliery, discharging a vast quantity of gas, not only in the coal itself, but from the floor of the mine. I think those mines are certainly liable to accidents of considerable magnitude, under any circumstances; and therefore the only way of working such mines (as Jarrow), with safety, would be to work them entirely with lamps." (*Minutes of Evidence*, p. 212.)

This view was taken of it by the proprietors and viewers after the last explosion; its terrors operated as a means of safety to the survivors, and no naked light was for its future to approach this gas-magazine.

John Atkinson, deputy, from Jarrow, examined by the same Committee, says (5499). "At Jarrow they work all with lamps; no candles have been allowed to go down ever since the last explosion." This was said in 1849, but in 1850, growing bold by immunity from accident, for they had been nearly five years without any, the viewer resolved, in the face of every danger, on the introduction of naked lights for particular purposes, and the men, alarmed for their lives, struck work—with what reason and result we shall shortly see. Considering the fatal antecedents of this mine, the absence of ventilation, the enormous quantity of gas, in 1830 by the force of a single blower detaching 6 tons of solid coal (*Philosophical Magazine*, Appendix No. 4, by Thomas J. Taylor), and in 1841 being 7,700,000 cubic feet of passages in three days (*Shields Mining Report*, p. 7), and considering the conviction, right or wrong, that the Davy lamp is a security against circumstances so imminently dangerous, it might be supposed that the proprietors and viewer of such a mine would have been rejoiced to have secured their people and their works against the always impending destruction, by its continued adoption.

But, no; a calculation is made, and it is found that the cost of working the coal by lamps, where gunpowder cannot be used for blasting, amounts in addition to about 8d. per score, one penny per ton, and would cost the colliery about 100*l.* a year. So that, for this miserable saving, hundreds of valuable lives are at stake daily on the mine; and being most prominent in refusing to be accessories to their own destruction, he insisted soon after on the coal being blasted with gunpowder; and to slur over the practice, or for some other motive, which I will not seek to penetrate, he insists upon the men, at the same time, working with the safety-lamp. Working with the safety-lamp, and blasting gunpowder with candles, not only in the same mine, but in the very workings which, by the adoption of the lamp, are emphatically pronounced unsafe by the viewer! This is a most extraordinary course of conduct—indeed, criminal, self-condemned, and big with fatal results.

The men, much alarmed, before the appointment of inspectors upon the 13th Nov., memorialised the Home Secretary, urgently praying his immediate attention to "the great danger to which they were exposed by their master introducing powder as a means of blasting coal in a pit so notoriously ill-ventilated as Jarrow." These are their own words, from their own document, and no better course could be adopted than by throwing themselves, in the emergency, upon the protection of Government. The charges against the men risking the lives of themselves and fellow-workmen by recklessness does not hold good here, at any rate, and probably in most other cases; but the silence of the grave is not easily broken.

Sir George Grey, it appears, had immediately on the appointment of the northern inspectors of mines referred the workmen's memorial to him, for we find him at Jarrow on the 29th Nov., accompanied by some of the men and the viewer, examining the condition of the mine. The nature of his opinions and suggestions, of which copies I understand were given to both masters and men, may be learnt from another memorial to the Home Secretary, which is expressed so well, and breathes such just and proper sentiments, that I cannot do better than leave this part of the case in their own hands.

"At a meeting of a large number of the workmen of Jarrow Colliery, held on Tuesday, December 17, I was requested to forward to you the following details regarding the safe working of the pit, and the continuance of the process of blasting the coal, as before complained of to you. The workmen are desirous to express their gratitude to you for the prompt attention in directing the inspector of mines for this district to examine into the causes of such complaint, and they beg to intimate that they were highly satisfied that the plan that inspector gave to the case, the result being a confirmation of the justness of such complaint, attended with kindly suggestions for removing the cause thereof, but which suggestions they regret to observe have not been attended to, nor has the practice of blasting the coal been discontinued, the master refusing to order the said practice to be laid off. Under these untoward circumstances, they feel themselves necessitated to appeal to you, trusting that something will be done to induce their employer to take some steps, either to increase the quantity of air, or to cease blasting the coal whilst the current of air is so weak as it is at present. They desire also to state that they have appealed to their employer on the subject, but he refused to adopt any such modes as were so kindly suggested to him by the inspector, his answer being that the whole of the workmen who thought themselves in danger might leave the colliery, thus leaving them no alternative but either to risk their lives or to allow their families to want bread, the depressed state of the coal trade rendering it next to impossible for them to obtain employment elsewhere. They would, therefore, humbly intreat (seeing the pit is subject to sudden eruptions of gas, commonly termed blowers, one of which, only a few days ago, was ignited by the firing of a shot, and created considerable alarm among them, but which, happily being of small force, was attended with no loss of life); that some attempt should be made by the authorities to take further cognizance of the matter, and for which attention, in addition to the regard the case has already had at your hands, they will consider themselves under deep obligations.

I am, Sir, on behalf of the workmen,
Dec. 20, 1850. Your humble and obedient servant,

"The following are the names of the workmen who guarantee the above statements, but whose names are forwarded in confidence, seeing the individual who wrote the last letter to you has been discharged from his employment at the colliery."

The Home Secretary, true to his duty, it appears had sent further instructions to the inspector on the subject, and again we find him at the colliery on the 30th December, investigating the case; and a day or two after the following report, found in the hands of the owners and workmen, each having received a copy, enables us to give it entire.

"Newcastle, Dec. 31.—Having yesterday again visited the east workings of the colliery, I have to observe, in reference to my former report, as follows:—1. That the quantity of air passing into the colliery is considerably increased by sundry measures.—2. That the doubling of the cross-cut doors is incomplete, inasmuch as one of the doors is only a swing door, instead of a frame door.—3. But, notwithstanding the increase of air, upon viewing the continual extension and change of circumstances in these workings, the universal system of bratticing, and the number of swing doors, together with the acknowledged necessity of working entirely with safety lamps, I am bound to declare against giving my sanction to the practice of firing shots with candles, even under the discretion of the overman and deputies, in a seam 6 ft. high, and so liable to sudden discharges of inflammable gas."—Signed by the Inspector.

The increase of air named in the first article is only a portion drawn from another part of the mine, and sent to this point of greatest danger, or rather immediate alarm, weakening that other part. There is no means, and no increased power, has been attempted to be applied for ventilation—the mine remains exactly as it has ever been in that respect. I know that the entire air consists of little more than 7000 cubic feet per minute, split and divided amongst about 16 working boards, giving in them an imperceptible breathing of air—not a mile an hour.

Let us look across the Tyne, nearly opposite, and there we find another mine in a widely different condition, with three downcasts and three upcasts, pouring upwards of 120,000 cubic feet of air per minute through the works; and, in a similar section of working of only 10 or 12 boards, in the same Bensham seam, and with 22,000 cubic feet per minute, three times that of Jarrow, with fewer workings, the safe and conscientious

viewer of Wall's-End, the whole trade knows, will not allow a shot to be fired, or a candle to go within a mile of such workings.

After the official opinion of the Inspector, the interference of the Government, the expressed alarms of the men, the acknowledged danger of the mine, the undeviating practice (the necessary practice, I will call it) amongst the northern mines, of where lamps are, no naked light shall come, it is impossible to view this extraordinary attempt to place this desperate mine in a desperate position, without a feeling of deep anxiety, approaching almost to horror. I am told that an effort is being made to procure the opinions of two or three indifferent viewers to sustain the Jarrow viewer in his fearful responsibility, notwithstanding the strong circumstances of the case, and the marked opinion of the Inspector, as well as others, herein detailed. In case of the act of the Jarrow viewer being succeeded by its inevitable consequences, will these irresponsible men share before the tribunals of their country the just punishment which will fall upon its perpetrators?

If any viewer is allowed at his pleasure to precipitate British subjects to destruction, to take the exact course to produce it, to set aside the repeated warnings of experience and clear consequences, to defy the officers of Government appointed to protect the miners and the mines, and repudiate the opinions and practice of experienced viewers, then farewell to Davy lamps, inspectors, and all appliances of safety.

If one viewer may so act, so may all, and British mining, instead of advancing in safety and in science, will again retrograde, under such auspices, into a state of barbarism. This faint description of the condition of things here, will, I earnestly hope, be in time to aid in arresting, what I cannot but conceive, an impending calamity.

January 15.

THE DURHAM COUNTY COAL COMPANY.

SIR.—A constant reader of your paper, and an adventurer in the Durham County Coal Company, residing at a distance from the speculative city of York, requests the favour of your assistance in obtaining the following information:—1. Is it likely that any part of the wreck of this unfortunate concern will be saved?—2. Can you inform me if the remains of the property is transferred, and to whom?—3. Can the Winding-up Act be economically and beneficially applied to enforce a fair statement from the directors of the accounts, in order to satisfy the shareholders that they have lost their money by fair dealing?

We are continually apprised of the sales of stock and of collieries, without being favoured with an account of how the receipts have been applied, or the description of security, if any, for the transfer of Coxhoe Colliery. We are also amused to hear of the bullying and subterfuge of the chairman, when called upon to give explanations. His replies are always cautious and mystified. The transactions may be well understood by the generality of his friends, who are in the habit of attending the general meetings (prepared for a show of hands); but there are others of the subscribers, at a distance from this celebrated "city of gamblers," who are extremely dissatisfied with the information conveyed in the reports.

The writer of this article feels called upon to appeal to you, in consequence of a trial he met with in an old London paper, headed "Humphreys v. Brogden." The case was tried at Durham about 12 months ago, and decided against the defendant, who was the manager for the Durham County Coal Company, and now secretary for winding-up the concern. He thought proper to move for a new trial in a higher court. The defendant is again nonsuited, and, therefore, threatens to renew the action. The directors have already mismanaged the affairs of the company to a great extent, by making large sacrifices in favour of railways and joint-stock banks, in which they hold shares. How far the shareholders will permit their property to be further plundered, I am at a loss to know. It is said that Humphreys would have been satisfied with 20% at first for the damage sustained by his firm; but the secretary thought 15% was enough. The directors being, therefore, confident of the immaculate judgment of their secretary, allowed the affair to be taken into court. Now it is stated the company has been fleeced to the extent of 500% before they got out of this dilemma. The probability is that, instead of 5% per share being left, the shareholders will be called upon again to make up a deficiency, more especially if the chairman adopts the architectural scale of charges of 7½ per cent. upon the expenditure. We may, then, bid adieu to our promised dividend.—R. H. J.: January 13.

ATMOSPHERIC INFLUENCES.

SIR.—Having shown that Professor Faraday's professed discovery of the magnetic condition of oxygen, and that the gas lost this property, in proportion to its increase of temperature, was a complete confirmation of the soundness of the groundwork of the system in natural philosophy, I have ventured to submit to public consideration, being, as it is, an admission that electricity is identified with cold and not with heat; in continuation of my letter of the 21st December last, I am induced to offer a few further remarks in reference to this highly interesting lecture, and I think I shall be able to show that the professor has approved not only of the foundation, but the columns of the edifice have likewise received his approbation; that, in fact, he has declared the whole structure to be worthy the consideration of the reflecting portion of mankind.

In a paper which I submitted to the consideration of the Board of Health in 1848, "On the Electrical Condition of the Human Frame, in reference to Epidemic and other Diseases," and which is published in *Newton's Journal of Arts* for March, 1849, after detailing certain experiments connected with crystallisation, I observe—

The above and other facts afford unquestionable evidence that electricity, which is evolved during the disintegration of matter, is identified with cold and not with heat; and on reference to "electrical condition" it will be observed, that the same evidence has brought me to the conclusion that electricity is the bond of union in matter; and that as bodies attract each other in proportion to their difference of electrical condition, the attraction of matter to the earth's centre (the extreme of negative electrical condition) must be in proportion to its density or positive electrical condition. * * * Weight, then, should be nothing more than a kind of indication of the electric force by which a positive-electric body is drawn to the negative centre of the earth; and, as matter increases in electrical condition in proportion to its density, it follows, as a natural inference, that matter, by compression or contraction, should increase in electrical condition, and, therefore, in weight.

In No. 12 of the papers by "S.," published in the *Mining Journal* of 1849, reference is made to this conclusion, and certain facts are adduced in its support; and Prof. Faraday, at the close of the year 1850, announces to the world his startling discovery, that he "had of late, by means of a peculiar differential tension balance, ascertained that as the oxygen was dense or rare, it gained or lost, for a given volume, proportionably of its magnetic power;" a property in matter, as will be seen above, that has enabled the moneyers at the Mint to pocket about 15,000% a year as "emoluments," but which, in consequence of the information I afforded to Sir Richard Lalor Shiel in March, 1849, will for the future pass into the public exchequer.

The law then being admitted, that matter increases in electrical condition by compression, and it being allowed of late by Sir John Herschel, that the Newtonian hypothesis is no longer tenable, but that we must look to electricity as the cause of gravitation, I presume either as attraction from below, or repulsion from above, there can be no deficiency of material on which to speculate for some little time to come, the more especially as it is far from improbable that the professor, or some other equally eminent member of the scientific world, may venture on making some further discovery connected with these important principles, I hope I shall not be deemed rash in hazarding to submit for the consideration of others, including the Royal Geological Society, who declined the consideration of my papers, the peculiar views which these principles have suggested to my mind in reference to remote ages, and to the future; there being, however, two facts which I think "S." did not adduce in support of these principles, I may as well refer to them on the present occasion.

In August, 1845, being desirous of putting to the test of experiment my principles of heat, I sought assistance at the hands of the directors of the Polytechnic Institution, and in my communication to them I observe—

You are, of course, aware that the electric spark will cause the combination of hydrogen and oxygen, that flame absorbs electricity, and that during the condensation of steam generated in your hydro-electrical machine, great quantities of electric fluid fly to the boiler. * * * It is clear, then, that electricity is absorbed during the condensation of vapour, and we know that water contains it in great quantities; and as electricity is absorbed largely during the formation of water and of carbonic acid, it appears to me evident that instead of what is commonly called heat, or caloric, being imparted to the water during the formation of vapour, that electricity must be abstracted from the water, and that the steam is the natural consequence of the water being deprived of a portion of its electricity, or of the power that holds its atoms together.

The directors having most liberally placed at my disposal their apparatus, assisted by Dr. Bachoffner, the able lecturer of that institution, I performed various experiments, which finally terminated in convincing me of my error, as regarded the electrical condition of high-pressure steam; but satisfied at the same time of the correctness of the principles on which that opinion was based, to discover the cause of high-pressure steam being positively electric, induced in my mind a train of thought which laid the foundation of the principles embodied in my paper to the Board of Health, already referred to; and the following experiment will show that pressure is not necessary to impart to vapour this highly-elastic property.

If a Florence flask be partly filled with hot water, to the extent that violent ebullition may be induced without any of the water boiling out of the flask, and during the ebullition a bit of alum be dropped into it, a large quantity of the water will be blown out, immediately the salt reaches the bottom of the flask, where the steam is generated. The alum, during crystallisation, yields free electricity, which, being absorbed by the nascent

vapour, imparts to it elastic properties: the vapour, in fact, is under the influence of two opposite electrical conditions, corresponding, "as it were," to the poles of a galvanic battery, which resolve water into its elementary gases.

FRANKLIN COXWORTHY,

Canterbury-place, Lambeth-road, Jan. 6. Author of *Electrical Condition*.

ON THE CONDUCTION OF HEAT IN BLAST-FURNACES.

SIR.—In your last Number, I read an interesting article on the employment of quicklime as a flux in blast-furnaces. I have long advocated this useful "reform;" but the suggestion was called "theoretical," which, with Prof. Karsten's unsupported dictum, was considered as decisive; but the "theory" is now matter of fact. This improvement has another practical recommendation not noticed—namely, that the cementation of the ore in quicklime will take up its sulphur, if any, which limestone cannot do. The experiments of Prof. Playfair and Bunsen,* prove that the whole of the oxygen of the blast passes into carbonic oxide at or near the tuyères. If this be fact, it follows incontestably that the whole of the heat in the higher regions of the furnace is heat produced by conduction from below and from the heated gases in their passage, and not by combustion above. It is like the heat given out by one end of a bar of iron, while the other end is in the fire. This is a most important fact in our consideration of the working of blast-furnaces. It points out to us that all causes tending to affect the uniformity of the temperature at any given point within the furnace—such as ore or fuel containing moisture, ore containing carbonic acid, raw limestone, &c.—should be sedulously avoided. Even the use of raw coal may, in this point of view, be of doubtful utility. But there cannot be a doubt that the daily introduction of several tons of solid carbonic acid, in masses scattered at irregular intervals through the furnace, must greatly derange the uniformity of its temperature, and, therefore, that of its working, while the gas is taking up its latent heat in passing into the aeriform state. It may, at first sight, appear that the solid oxygen of the ore should produce similar effects; but here a sort of compensation takes place (as appears from Prof. Playfair and Bunsen's report) through the combination of the carbon, or carbonic oxide, with this oxygen, which combination evolves heat enough to become the required latent heat of the resulting gas. This fact of conduction, assuming it to be established, will enable us to test the process of "tapping" the furnace (it matters not how), in order to obtain its gases for fuel. These gases are driven up from below intensely heated; and they heat in their passage the whole mass of materials in the furnace up to its throat. If they be withdrawn from a point even a few feet below this, their heat is lost exactly when it is of most importance to obtain its full effect—viz., heating the fresh and cold charges, and driving off moisture, &c., from the ores and the fuel. This consideration would seem to be decisive; and, therefore, if we are to use the furnace gases, it should be after they have performed their function and quitted the furnace. It remains to be seen whether this fact of conduction, if sufficiently established, will not lead to other important conclusions as to the form of the interior of the furnace, the mode of charging it, &c.—FRANCIS C. KNOWLES: London, Jan. 10.

* Reports of British Association. Cambridge: 1836.

THE COPPER TRADE.

SIR.—Though much has been said in the columns of your *Journal* on this subject, yet so great a revolution is taking place in this trade as to justify a few remarks, ere the English copper trade is reduced to very little importance, in comparison to the copper produce of other countries. The reduction, I might almost say the repeal, of the duties on copper and copper ore in 1848, has produced the effect which many persons anticipated, which was, a greatly increased importation of the metal. This is proved by the fact, that there were no less than 1749 tons of copper, besides 9200% worth of copper manufactures imported in the year ending Jan. 5, 1849, while in the previous year the importation was only 1017 tons, and 4351% worth of copper manufactures. In the year ending Jan. 5, 1850, the imports of copper were 2836 tons, besides copper manufactures, valued at 25,338%. The imports for last year are not yet made public; but, judging from the imports for the 11 months ending Dec. 5, 1850, which were 4238 tons, we shall not be far wrong in estimating them at 4500 tons of copper.

In turning from this formidable increase in foreign copper to the exports of other countries, we find that there were exported from South Australia 700 tons in the half-year ending 30th of last June; while in the same period of 1842 there were only 35 tons, the increase being 2000 per cent. From Chili also the increase has been very great, that country having exported 9000 tons in 1849, and only 2267 tons in 1839. If these facts be contrasted with the copper trade of Cornwall, there is at once seen a lamentable difference, since the production of copper ore in the year ending 30th June, 1839, was 159,214 tons, of the value of 932,090% but in the year ending 30th June, 1849, there were only 144,983 tons, of the value of 717,917%—a falling off of 214,173%.

This enormous decrease can surprise no one who is acquainted with the wasteful manner by which the Cornish ores are smelted, and with the neglect of the vast natural resources of the country. The unfortunate sinking in Devon and Cornwall of upwards of 2,000,000% in railways, which have not yielded from traffic a farthing of dividend, is a sad incubus, and is likely to lead to consequences that all must deplore. I have only to add that foreigners are not neglecting opportunities in copper smelting, which, in all human probability, would never have been neglected in Devon and Cornwall, but for the ruinous speculations of those counties in railways.

Jan. 16. WILLIAM BIRKMYRE.

UPCAST SHAFTS.

SIR.—I perceive that "Steam" has been puffing over my letters, which "J. J. A." controverted last September, until he cannot discern which of us is which. This is not surprising. "Steam" has always been a blustering misty-headed genius, when not "groping" in the dark, wandering in clouds, and wrapping in obscurity whatever he approached—a blind maniac, useless and mischievous, except when led, commanded, and confined. The engineer at Blaenavon should look to his valves when the waste steam is getting to London. He should recollect, when he blows off three propositions, that they cannot be seen through without the aid of a condenser.—DAVID MUSHET: January 8.

COOKING BY GAS.

SIR.—There is certainly economy in the employment of scientific principles elicited by genius and art. I was extremely pleased in witnessing, a short time ago, the very ingenious apparatus constructed and invented by Mr. Sharp, the skilful superintendent of the Southampton Gas-Works, for cooking by gas. It is at once cleanly and economical, and very compact, and, I may add, elegant. Mr. Sharp engaged to cook a supper for one hundred persons connected with the Southampton Polytechnic Institution for sevenpence, and effected his purpose! The only counteracting influence I should fear would be the impurity of the gas employed; but the gas of the Southampton Gas-Works, under the judicious management of Mr. Sharp, is remarkably pure.

Broadstone, Stranraer, Jan. 6.

MR. MAGNUS'S ENAMELLED SLATE.

SIR.—When last in London, I was extremely gratified by a visit to Mr. Magnus's very interesting Enamelled Slate Works at Pimlico. The exceeding beauty of these ingenious, elaste, and elegant specimens of art and science struck me with surprise. I had read and heard of them; but "the half was not told me." Luculline, Egyptian, and Lumachella marbles, jasper, porphyry, brocatella, lapis lazuli, &c., are imitated with amazing fidelity; and the extreme durability of the enamelled slate seems indisputable. From these beautiful materials were made the Royal Albert table for Osborne House, at a cost of 300 guineas, and a billiard table for the Duke of Wellington, price 170 guineas.

Jan. 6.

APHLOGISTIC EFFECT OF ACETATE OF COPPER.

SIR.—There is a phenomenon recognised by chemists under the name *aphlogiston*—ignition unaccompanied by flame, and exemplified when an ignited coil of platinum wire is immersed in the vapour of sulphuric ether, or a ball of spongy platinum overtops the spirit lamp. Thus a green wax taper, when simply blown out, will continue to the end to smoulder away like "touchwood," and may eventually set fire to anything it may happen to be in contact with. If a very "slow match" were wanted, acetate of copper might be advantageously employed.

The following is a very singular example:—A tallow candle was dyed green with acetate of copper, and was used for a bed-room. It was simply blown out, and was found in the morning still smouldering away. The

heat was insufficient to melt the entire tallow; and it thus formed a deep well in the centre. The act of combustion continued in all twenty-four hours! What a poisonous atmosphere for a bed-room! J. MURRAY.

Jan. 6.

DAVY'S SAFETY-LAMP.

SIR.—Every one who has studied and made experiments with Davy's safety-lamp, is quite aware that the safety is only conditional or contingent, and not absolute. There is no enigma. The flame may be easily impelled through the wire meshes, whether by a current of air traversing the mine, or in the case of the safety-lamp in its transit through a "blower." Obviate the causes; surround the wire gauze with a concentric cylinder of "Muscovy glass," and its safety is secure. I should wish this simple provision esteem the "Davy lamp" superior to all others. Again and again have I insisted on this necessary provision to ensure its safety. A narrow ring of unprotected gauze below the transparent screen of mica will admit the required supply of air; and air will also descend from above. Nothing can atone, or be a substitute, for imperfect or neglected ventilation. That is the chief—the paramount thing. The safety-lamp is merely auxiliary, occasionally required for exploration—the test of safety—an indicator of perfect or imperfect ventilation. J. MURRAY.

Broadstone, Stranraer, Jan. 13.

AN IRON CHURCH.—At this time, when the construction of the Great Exhibition Building, and of iron structures in general, is occupying all minds, it may not be deemed improper to draw attention to a successful effort in the same direction made 10 years ago; we allude to the Bowling Church, near Bradford, built in 1840, at the sole expense of the eminent firm of the Bowling Ironworks, for the use of their numerous workmen, and of the surrounding population. It is composed entirely of stone and iron, excepting the rafters, &c. of the roof, which are, consequently, the only combustible portion. There is a spire 136 ft. high; and, from the lofty site of the building, it forms altogether an object of considerable interest. The Lancet Gothic capitals are of very elaborate iron casting; and there is an immense quantity of ironwork introduced into various parts of the fabric: 10 years' experience has proved that the building is most substantial; and on a recent visit by the architect, he found all to be exactly as it was when the contractors left it.—*Wolverhampton Chronicle*.

SHREWSBURY AND BIRMINGHAM RAILWAY COMPANY.—LOANS ON DEBENTURES.

The DIRECTORS of the SHREWSBURY AND BIRMINGHAM RAILWAY COMPANY are prepared to RECEIVE TENDERS OF LOANS, to be secured on the Company's Debentures.—Applications, with particulars of amount, term and rate of interest to be made to

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KUPER & CO. request particular attention to their IMPROVED FLAT ROPES, and their very superior mode of stitching; also to their ROUND ROPES, for Inclines, &c., and FIT GUIDES or CONDUCTORS made of very thick wire, and in one length, without joints.

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SIGNAL CORD, galvanised or varnished, of all sizes, for Mines, Railways, &c., from 14s. per 100 yards.

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THE CURRENT OF AIR IN MINES, &c.

This INSTRUMENT is CONSTRUCTED so that the ACTION of a CURRENT of AIR on EVERY PART of the VANES may tend to PRODUCE a REVOLUTION of the WHEEL in the same time—the number of feet lineal which have passed through the wheel being shown by indices which revolve on the dial-plate underneath the handle.

Further particulars, with references, may be had on application to the patentee.

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The PATENTEE respectfully solicits the attention and patronage of COAL PROPRIETORS to the above LAMP—the LIGHT from which will be found FOUR-FOLD that of the Davy Lamp—the SAFETY SUPERIOR, and the COST IN OIL not ONE-HALF the expense of candles, even when burning free from draft; whilst, from the light being shielded from the wind, a current of air, inadmissible where naked candles are used, may be passed through the galleries of a mine, without inconvenience.

Wentworth, near Rotherham. BEN. BIRAM.

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JACKS, MANUFACTURED BY W. AND J. GALLOWAY, PATENT RIVET WORKS, MANCHESTER.

The attention of parties who employ Lifting Jacks, is respectfully requested to the superiority of those annexed, over those hitherto in use.



MINING INVESTMENT.—Mr. J. H. MANDEVILLE, No. 29, CHANGE-ALLEY, CORNHILL, has SHARES FOR SALE in several FIRST-CLASS MINES, paying from 15 to 25 per cent. on present purchase. He is also in a position to BUY and SELL in the following promising MINES:—Great Sheba Consols, Daren, Court Grange, Wheal Augusta, West Phoenix, Kingest and Bedford, East Ballewidden, Penhale, Carthou Consols, Copper Bottom, &c. FOREIGN:—United Mexican, Santiago, and Imperial Brazilian.

MINING AGENCY.—The SUBSCRIBERS respectfully intimate, that their old and extensive CONNECTIONS afford them peculiar FACILITIES for EFFECTING SALES or PURCHASES of MINING SHARES with the utmost promptitude, and upon the best possible terms. They also beg it to be distinctly understood, that considering it to be incompatible with their duties as agents to speculate upon their own account, they have determined to adhere exclusively to a legitimate commission business. ESTABLISHED 1839. JAMES S. TRIPP & CO., Lombard-street Chambers, No. 33, Clement's-lane, City.

MINING PROPERTY.—BUSINESS transacted in every description of MINING PROPERTY, SHARES BOUGHT and SOLD, ADVICE GIVEN to PARTIES as to INVESTMENT, ADVANCES of MONEY MADE on this DESCRIPTION of PROPERTY, Statistics given on Mines, and the earliest information obtained from the mineral districts.—Apply to DURRANT & CO., Mining Sharebrokers, 68, Lombard-street.

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MINING OFFICES.—48, THREADNEEDLE-STREET, LONDON.—Messrs. THOS. FULLER & CO., beg respectfully to call the attention of CAPITALISTS to MINING, as being the most SAFE and PROFITABLE MEDIUM of INVESTMENT, and are in a position to BUY and SELL in all the DIVIDEND-PAYING MINES, and have on hand several other MINES, which will insure to capitalists the most safe investment, and will pay from 15 to 30 per cent.

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CHEMICAL, MINERALOGICAL, and AGRICULTURAL SCHOOL.—38, KENNINGTON-LANE, LONDON. The SCIENTIFIC DEPARTMENT under the direction of J. C. NESBIT, F.C.S., F.G.S., one of the Principals.

INSTRUCTIONS are given in AGRICULTURAL CHEMISTRY, and the making of ARTIFICIAL MANURES.—Mineral Analysis taught in all its branches. Analyses performed as usual, on moderate terms.

CLASSICAL, MATHEMATICAL, & CHEMICAL SCHOOL, MAIDENHEAD, BERKS.

In this School it is sought to combine the development of the physical, moral, and intellectual powers, with the acquisition of knowledge, and to make the course of study an introduction to the pursuits of life. Crawford House, with spacious dormitories, dining, school, and play rooms, was erected four years ago, expressly for educational purposes; and since that time the establishment has been exempted from illness. The situation is elevated, in the vicinity of the Thames, the scenery extended and picturesque, the air bracing, and the grounds comprise 14 acres.

Besides the usual studies of Classical Schools, GERMAN and FRENCH are spoken—the latter language daily, with the assistance of natives, until Four o'clock. Mathematics are taught, theoretically and practically; there are drawing and singing classes. Physical science is pursued progressively, and the recently erected laboratory is devoted to chemical analysis, now so essential to the miner, agriculturist, and manufacturer.

Mr. J. D. M. Pearce, A.M., will be happy to forward prospectuses and references in answer to applications.

GEOLOGY.—PERSONS wishing to become ACQUAINTED

with this interesting BRANCH OF SCIENCE will find their STUDIES greatly FACILITATED by means of ELEMENTARY COLLECTIONS, which can be had at Two, Five, Ten, Twenty, or Fifty Guineas each, arranged and sold by Mr. TENNANT (Mineralogist to Her Majesty), 140, STRAND, LONDON.

A Collection for Five Guineas, which will illustrate the recent works on Geology, contains 200 specimens, in a Mahogany Cabinet, with five trays—viz.:

MINERALS which are the components of rocks, or occasionally imbedded in them: Quartz, Agate, Calcedony, Jasper, Garnet, Zeolite, Hornblende, Augite, Asbestos, Felspar, Mica, Tale, Tourmaline, Calciferous Spar, Fluor, Selenite, Baryta, Strontia, Salt, Sulphur, Flambago, Bitumen, &c.

METALLIC ORES:—Iron, Manganese, Lead, Tin, Zinc, Copper, Antimony, Silver, Gold, Platina, &c.

ROCKS:—Granite, Gneiss, Mica Slate, Clay Slate, Porphyry, Serpentine, Sandstones, Limestones, Basalt, Lava, &c.

FOSSILS from the Llandovery, Wenlock, Ludlow, Devonian, Carboniferous, Lias, Oolite, Wealden Chalk, Plastic Clay, London Clay, and Crag Formations, &c.

Mr. TENNANT gives PRIVATE INSTRUCTION in MINERALOGY, with a view to FACILITATE the STUDY OF GEOLOGY, and of the application of Mineral Substances in the Arts, illustrated by an extensive Collection of Specimens, Models, &c.

ANTHONY'S PATENT AMERICAN CHURN.—This PRIZE IMPLEMENT has again been VICTORIOUS at a TRIAL at AVONDALE CATTLE SHOW, where it was pronounced the BEST CHURN, after a fair trial with two others, on the ground. None are genuine without the name and address of "Key and Mitchell, No. 103, Newgate-street, City," where a stock is always on hand. The liberal deal with.—Apply at the Depot for Patent and other New and Useful Inventions, 103, Newgate-street.

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BROWN'S UNIVERSAL BAROMETER.—Price 10s. 6d.—Registered under the Act for Protection of Articles of Utility.

An ELEGANT and PORTABLE INSTRUMENT, for Foretelling Atmospheric Changes and Ascertaining Elevations. Constructed on the Torricellian, or most correct principle, greatly simplified and improved, whilst the price is not a quarter that of an ordinary barometer.—MANUFACTURED and SOLD by L. P. CASELLA & CO., No. 28, HATTON GARDEN, LONDON.

By whom also the trade is supplied; and may be ordered of all opticians and mathematical instrument makers.

UNDER BRITISH AND FOREIGN LETTERS PATENT.

HUTCHINSONISED STONE, BRICKS, &c.—TO LAND PROPRIETORS, ENGINEERS, ARCHITECTS, &c.—THE SOFTEST STONE, CHALK, GYPSUM, CLAY, SAND, &c., INDURATED AS HARD AS GRANITE—will never vegetate nor disintegrate, being impervious to atmospheric action, &c.

For all Foundations, external and internal Buildings, Docks and Sea Walls, Sewerage, Paving, Decorative and Ornamental Works, the HUTCHINSONISED MATERIALS are unequalled for durability and low cost.—See Testimonials and Prices.

PASTEBORD, SOFT WOOD, and other ABSORBENT MATERIALS, rendered WATERPROOF, and impervious from weather, vermin, &c.

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Apply to Wm. HUTCHINSON, Hutchinsonised Stone Works, &c., Tunbridge Wells, Kent.

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A TREATISE ON THE STEAM-ENGINE, in its Application to MINES, MILLS, STEAM NAVIGATION, and RAILWAYS.

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"The great merit of the present work is the vast quantity of information which it affords as to details of construction. In this respect it seems unrivalled." It contains a vast store of invaluable facts.—Civil Engineer and Architect's Journal, London; Longman, Brown, Green, and Longmans.

THE MINING ALMANACK, FOR 1851.—Under the immediate Patronage of His Royal Highness PRINCE ALBERT, K.G., Lord Warden of the Stannaries, &c.—Edited by HENRY ENGLISH, Editor of the Mining Journal, &c.

It is much to be regretted that the exertions made by the Editor in endeavouring to procure returns from the several mines should have met with so much apathy on the part of agents and adventurers—it being the object to render the pages of the Mining Almanack a work of reference and information, calculated to uphold and advance the mining interest. It is still to be hoped that, in the absence of assistance from such parties, and which he has every right to expect, information will be rendered by others, so as to effect the object in view; while it is to be regretted that those whose interests are most concerned should have thrown impediments in the way. All communications will be treated as confidential, while it will be a duty imposed on the Editor to notice those mines from which information is declined.

REPLIES to the following QUERIES will be esteemed a favour:—Situation and Name of Mine.—Term of Lease.—Dues.—Amount Paid per Share.—Calls during the past Twelve Months.—Dividends Paid.—Quantity of Ore Sold.—Amount of Money.—Offices in London.—Name of principal Agent and Purser.—with such further information as may be deemed desirable to furnish.

Offices of the "Mining Almanack," 25, Fleet-street, London.

COUGHS, ASTHMA, and INCIPIENT CONSUMPTION

are EFFECTUALLY CURED.—KEATING'S COUGH LOZENGES have been proved by long experience to be equally efficacious and powerful in those severe forms of pulmonary affections—asthma, incipient consumption, chronic bronchitis, and spasmodic cough—as in the milder, but often not less troublesome disorders of the throat and chest, winter cough, hoarseness, difficulty of breathing, and irritation of the throat, &c. Their entire freedom from all deleterious ingredients and opiates, whilst it renders Keating's Cough Lozenges a safe remedy for the most delicate female or youngest child, has caused them to be held in the highest esteem by public speakers, clergymen, and professional singers; but, perhaps, the high approval which is bestowed upon these lozenges by some of the most eminent of the faculty, is the best and most convincing guarantee of their safety, efficacy, and purity.—Prepared and sold in boxes, 1s. 1jd., and 2s. 9d., 4s. 6d., and 10s. 6d., each, by Thomas Keating, Chemist, &c., No. 79, St. Paul's Church-yard, London. Sold retail by all druggists, and patent medicine vendors in the kingdom.

IMPORTANT TESTIMONIAL.

Church-street, Folkestone, Nov. 22d, 1848.

Sir,—Having been troubled with a very bad cough for the last eight months, I applied to Mr. Hammon, chemist of this town, for some relief; he recommended me your "Cough Lozenges," which I am happy to say cured me in a week. I beg most cordially to recommend them, and request you will not hesitate to make this letter public; such a valuable remedy cannot be too highly recommended.

JOHN HILL, Bank.

NAP DOWN CONSOLS SILVER-LEAD MINING COMPANY, COMBARTON, NORTH DEVON.

OFFICES—No. 59, THREADNEEDLE-STREET, LONDON.

In 3000 shares, of £2 each.—Deposit £1.

CONDUCTED ON THE COST-BOOK SYSTEM.

BANKERS—Messrs. Masterman and Co., Lombard-street, London; and the National Provincial Bank of England, Barnstaple.

SECRETARY—Mr. James Lane, No. 80, Threadneedle-street.

The following are some of the advantages under which this Company will commence operations:—

1. The lode have been laid open to such an extent, that returns may soon be made.

2. The works are in progress of clearing, and a splendid new combined cylinder steam-ramping engine, built by Sims, of 100-horse power, with an entire set of pumps, are ready for work.

3. Labour is plentiful and coals cheap, and there are smelting-works in full operation close to the mine.

This Company may be fairly said to be one of the finest opportunities ever presented to the public for engaging in a highly profitable undertaking, at a very moderate expenditure. An extraordinary and important discovery has recently been made by shodding on the back of the main lode—nearly 2 tons of silver-lead have been raised in blocks of from 1 to 8 cwt. each. The lode, at this depth, carries a fine gossan, rich in silver; and in the captain's report of the 25th November last, he says—"On Saturday last several pieces of solid ore were discovered in ground that has never been explored—the largest piece weighing 364 lbs., and is an exceedingly splendid specimen."

In addition to the rich deposit of lead and silver with which the mine is stored, there is likewise a copper lode, of a promising description, from 3 to 3½ feet wide.

Applications for shares to be made to Messrs. Allsop, stock and sharebroker, No. 1, Royal Exchange-buildings, London; Mr. James Lane, secretary, at the office of the Company; and William Thorne, Esq., Barnstaple, Devon; or of the following brokers:—J. Davies, 38, Tower-buildings, Liverpool; E. Speakman, Exchange-chambers, Manchester; C. Beardsall, Leeds; J. Ironside, Sheffield; Messrs. T. W. Flint and Co., Hull; G. Trickett, Post-office Chambers, Plymouth—to whom all communications may be addressed, and of whom prospectuses and plans may be obtained.

WHEAL GILL MINE—ST. CLEER AND ST. IVES, NEAR LISKEARD, CORNWALL.

Deposit £1 per share, divided into 1536 shares.

A great portion of which are already taken up by respectable and responsible parties.

This MINE is situated in the parishes of ST. CLEER and ST. IVE, nearly 2 miles in length, and not far from those celebrated and profitable silver-lead mines, called Trellawny, Wheal Mary Ann, and Trebarn—having a general similar rich lode of lead running through the whole length of the southern part of the sett. Large rocks of silver-lead are now visible at the 16 fathom level, and can be taken away on tribute. These lodes can be cut also at the 54 fathom level, which is of immense importance.

There are also five known copper lodes to the north of the sett, of the most splendid description, with excellent cross-courses. These copper lodes are on the south-east of those very valuable and profitable mines called South Caradon and West Caradon. One lode in particular has been worked on, and contains large and rich deposits of copper ore. This ore can be also taken away at tribute in the 54 fathom level.

All practical miners in the neighbourhood of Liskeard admit that Wheal Gill is a very valuable and rich sett, both for silver-lead and copper ore; and it only requires a small capital to bring the ore to grass, and make the mine a rich dividend-paying mine. The former adventurers truly regretted the cessation of the mine, which was caused by not having sufficient steam-power at first, a circumstance too often leading to the abandonment of the richest mines in Cornwall. The present company have purchased a 70-horse cylinder steam-engine, of sufficient power to carry the mine down 200 fathoms, and many of the former adventurers have in consequence joined the undertaking, being fully satisfied of the results.

Ten years' perseverance and work, at an outlay of £15,000, has been already accomplished all of which the present company have secured from the lessees, and have that advantage, for the sum of £1500—a circumstance of vast importance, and almost unparalleled. The only reservation to the owners of the sett being 536 shares, according to the conditions of the cost-book.

The owners of the mine have thought proper to take the advice of the most talented mining men of the age, and have called in the following parties to inspect the same:—viz.: Evan Hopkins, Esq., of 13, Austinfriars, London; Captain J. Kemp, of Trellawny Mine; and Captain Richards, of Trebarn, as well as several other practical miners; and annexed are their reports, which must at once satisfactorily prove to every one the character of Wheal Gill, and her qualifications as a valuable and rich mining property.

Gentlemen wishing to purchase a few shares are requested to apply forthwith, as the sett is distinctly understood, in making such application, a reference must be forwarded:—James Lane, Esq., 52, Threadneedle-street, London; the Devon and Cornwall Banking Company, Liskeard, Tavistock, Exeter, and Plymouth; Messrs. Sanders, bankers, Exeter.—The calls will not exceed £1 per share every two months.

REPORT OF EVAN HOPKINS, ESQ.

This mineral property is situated in a valley, a few miles north of the Trellawny Lead Mines. The general character of the formation is a variegated clay-slate, traversed by numerous light blue clay veins, and also by cross-courses running from the Trellawny Lead Mines, and presenting every indication in structure, composition, configuration of the valley, and the gossan, for making large bunches of lead ore in depth, but more especially southward. On the west side of the main cross-course the rock becomes more hornblende, and the east and west lodes have produced many tons of copper ore, with sulphure of zinc; a large bunch was also found in the east side of the valley. This is, as regards lead, a most important sett, and deserving immediate attention; and although it predominates in lead and zinc, yet large masses of copper ore may be found westward from this point within the limits of the sett.

13, Austinfriars, London.

REPORT OF CAPTAINS S. RICHARDS AND JOSEPH KEMP.

We have gone over this sett, and find therein two excellent lead mines, which will produce abundance of silver lead at a very shallow depth, inasmuch as large rocks of lead may now be broken in the 16 fm. level. These lodes are not far from the rich mines of Trellawny and Wheal Mary Ann. They are similar, and can be cut at once at the 54 fm. level; so that you have a good lead mine at once. The copper lodes could only be seen on the backs, where they have a very good appearance; and we have been informed, by parties who worked on the mine last, that there is a fine course of copper ore in the bottom level, the last stone taken from the mine was of a fine quality of copper ore. We have seen some of the ore, which is rich. We would recommend you to fork the mine immediately; you will then have a profitable mine. The enormous quantity of work done, the great outlay that has taken place, the actual discovery of a rich course of lead, and another of copper, quite satisfy us that very few sets present such advantages. Every practical miner in the neighbourhood of Liskeard speaks well of Wheal Gill.

J. SEYMOUR, Trevelly; J. SPARGO, Great Sheba; H. TAYLOR, West Caradon.

REPORTS OF CAPTAINS S. RICHARDS AND JOSEPH KEMP.

We have carefully surveyed the surface of this sett, which is a very extensive one, and find there are three lodes running through it, one east and west, or copper lode, and two north and south courses, or lead lodes. The grounds about these lodes is a light blue killas, and in places it is highly mineralised. We can say but little of the eastern lead lode, as the pit where it has been opened on is full of water. We saw, however, some flooken, quartz, &c., which was broken from this lode, and judging from its appearance, should say it is well worthy of trial, the ground being very congenial for lead, and we are informed that the lode is a large one. The western lead lode is about 2½ feet wide, composed of capel, quartz, and gossan—a very promising lode. We would recommend that this lode be first opened on the back, in places which would show the most promising part to continue the spited operation. This lode is about half a mile east of the Trellawny lode, and is running nearly parallel with it. We had an opportunity of seeing the back of the copper lode about 60 fathoms from the engine shaft, where it contains a great quantity of fine gossan, capel, zinc, and rich spots of copper ore, altogether a large and very promising lode. From what we have heard and seen of the old mine on this lode, together with the two lead lodes and the work already done—viz., shafts sunk, levels driven, &c.—we consider Wheal Gill a fine speculation.

S. RICHARDS, Trebarn Mine; J. SEYMOUR, Trevelly; J. SPARGO, Great Sheba; H. TAYLOR, West Caradon.

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We have carefully surveyed the surface of this sett, which is a very extensive one, and find there are three lodes running through it, one east and west, or copper lode, and two north and south courses, or lead lodes. The grounds about these lodes is a light blue killas, and in places it is highly mineralised. We can say but little of the eastern lead lode, as the pit where it has been opened on is full of water. We saw, however, some flooken, quartz, &c., which was broken from this lode, and judging from its appearance, should say it is well worthy of trial, the ground being very congenial for lead, and we are informed that the lode is a large one. The western lead lode is about 2½ feet wide, composed of capel, quartz, and gossan—a very promising lode. We would recommend that this lode be first opened on the back, in places which would show the most promising part to continue the spited operation. This lode is about half a mile east of the Trellawny lode, and is running nearly parallel with it. We had an opportunity of seeing the back of the copper lode about 60 fathoms from the engine shaft, where it contains a great quantity of fine gossan, capel, zinc, and rich spots of copper ore, altogether a large and very promising lode. From what we have heard and seen of the old mine on this lode, together with the two lead lodes and the work already done—viz., shafts sunk, levels driven, &c.—we consider Wheal Gill a fine speculation.

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PRICES OF MINING SHARES.

It being difficult to obtain a correct knowledge of all the mines in our list, we trust that agents, and others interested, will assist us, by forwarding any additions, or corrections, with which they may be acquainted—our object being to present it as accurate as possible. We have also added a column to note the actual business transacted; but which, without the constant assistance of brokers and agents, cannot become so complete as we could wish. The desirability of such a record is generally admitted, and we invite the co-operation of all parties concerned, in rendering it perfect.

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
2000	Aylesborough (tin), Sheepshead	2 1/2	6 1/2	7
4000	Bellford United (copper), Tavistock	2 1/2	6 1/2	7
1200	Birch Tor and Vithier (tin), Dartmoor	10 1/2	4	
1024	Borlindon Park (silver-lead), Plympton	4	3 1/2	3 1/2
1500	Briford Wheel Augusta (lead), Briford	4	1 1/2	
4000	Devon and Courtenay Consols (copper)	1 1/2	2 1/2	4 1/2
4160	Devon Great Consols (copper), Tavistock	1 1/2	270	250
750	Devon Tamar (silver-lead), River Ferris	4	5	
250	East Bitch Tor (tin), North Bovey	3	3	
2048	East Crowndale (tin), Tavistock	7 1/2	1 1/2	2 1/2
4000	East Gannals Lake Junction (copper)	4	1 1/2	1 1/2
9000	East Tamar Consols (silver-lead)	1 1/2	1	1 1/2
2048	East Wheal George (cop.), Walkhampton	1	10	
512	East Wheal Josiah (copper), Tavistock	1 1/2	2	
4000	East Wheal Russell (copper), Tavistock	4	6 1/2	6 1/2
1024	Exmoor Eliza (copper), South Molton	2 1/2	2 1/2	
1500	Hennock (silver-lead), Hennock	2	2 1/2	2 1/2
1024	Kingstons and Bedford (lead and copper)	3 1/2	5 1/2	3 1/2
1742	Lamerton Wheal Maria (copper & tin)	11 1/2	1 1/2	1 1/2
3000	Map Down (silver-lead), Combarnett	1	1	
1024	N. W. East Crowndale (copper and tin)	2	2	1
1024	North Wh. Robert (copper), Walkhampton	2	2	
1000	Peter Tavy and Mary Tavy (copper)	2 1/2	8	
512	Plymouth Wheal Teolund (tin), Plymouth	6 1/2	6	
2048	Runnaford Coombe (tin)	2 1/2	3 1/2	4
250	South Friendship Wh. Ann (copper & tin)	30	28	30
250	South Molton (lead)	12 1/2	12 1/2	
1024	South Plain Wood (copper), Ashburton	3 1/2	6 1/2	2 1/2
9000	Tamar Consols (silver-lead), Beer Ferris	4	5 1/2	5 1/2
2000	Tavy Consols (copper), near Tavistock	8	4 1/2	3
1024	West Downs (copper and tin), Whitechurch	2	2 1/2	
1024	West Wheal Friendship (copper)	3	3 1/2	3 1/2
4000	West Wheal Russell	1	1	1
1070	Wheal Adams (lead), Christow, Exeter	13 1/2	16	
250	Wheal Benny (copper), Calstock	19 1/2		
250	Wheal Carpenter (tin and cop.), Gwinear	1	2 1/2	
1024	Wheal Crebor (copper), Tavistock	2 1/2	3 1/2	3 1/2
1024	Wheal Emilly (antimony and lead)	3	5 1/2	5 1/2
1024	Wheal Fawcett (copper), Tavistock	4 1/2	1 1/2	13 1/2
754	Wheal Franco (copper), near Tavistock	13 1/2	10 1/2	14
126	Wheal Friendship (copper)	120	120	
1024	Wheal Hamlyn, near Oakhampton	1	1	
2048	Wheal Harris (lead), near Tavistock	1	1 1/2	1
2000	Wheal Langmaid (lead)	1	1 1/2	1
1024	Wheal Mary Ann (copper), Bristow	1	1 1/2	2 1/2
5000	Wheal Providence, South Sydenham	1	2 1/2	4
1024	Wheal Russell (copper), Tavistock	4	4 1/2	6

EAST CORNWALL DISTRICT.

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
3650	Bawden (silver-lead)	4	4 1/2	
1024	Bodmin Consols (lead), Wadebridge	4	4 1/2	4 1/2
5000	Bodmin Moor Consols (tin and copper)	1	4 1/2	
400	Bodmin Moor Consols (tin and copper)	1	4 1/2	
400	Bodmin Moor Consols (tin and copper)	1	4 1/2	
1000	Callington (lead and copper), Callington	28	9	10 1/2
4000	Calstock United (copper)	5	5	5
1168	Caradon Great Cons. (cop.), Linkinhorne	7	3	
1536	Caradon Vale (copper and lead), St. Ives	12 1/2	1 1/2	
3000	Cartlew Consols (cop. & lead), Wadebridge	4	7	
500	Comblawn (lead), Callington	8		
1000	Coombe Valley (quarry slate), St. Ginnis	5	7	
211	Craddock Moor (copper), St. Cleer	28 1/2	6 1/2	2
2560	Drake Wals (tin and copper), Calstock	3	3	
1024	East Polgoth (tin)	6	7 1/2	
1024	East Sharp Tor (copper)	5	8	
1000	East Trescott (tin), Lanivet, near Bodmin	1	2	
494	Fowey Consols (copper), Tywardreath	40	30	
256	Gonnema (copper), St. Cleer	46	15	
2000	Great Beam (tin)	5	7	
1024	Great Sheela Consols (tin and copper)	2	12 1/2	13
3072	Great Wheal Mitchell Cons. (cop.), Lanivet	3	3	
412	Gr. Wheal Tor Cons. (cop.), Camelford	25	20	
6000	Growna Slate Company, Camelford	5	5	
1024	Hawknor (cop.), Calstock, Gannals Lake	5	17	
6000	Heligston Down Cons. (copper), Calstock	27	2 1/2	4
812	Herodfoot (lead), near Liskeard	24	12 1/2	
1000	Holmish (lead and copper), Callington	24	20 1/2	21 1/2
6000	Markle Valley (copper), Caradon	10	3 1/2	
128	Metha (lead) Newlyn	34		
256	Mineral Court (tin), near St. Austell	22	50	50
1024	Modtongham & Marrabro (copper & lead)	1 1/2	2 1/2	25
256	North Fowey Consols	1 1/2	4 1/2	
1024	Okef Tor (lead)	1 1/2	4 1/2	
128	Par Consols (copper), St. Blazey	55 1/2	650	
406	Penhauger	1	6	
2048	Pentire Glaze (silver-lead), St. Minver	5	9	8
5000	Roche Rock (tin), Roche, near St. Austell	1	1	
5000	Rocks Mine (tin), Roche, near St. Austell	5	5	
256	South Caradon (copper), St. Cleer	5	205	100 122 1/2
256	South Trelawny (lead), near Liskeard	31	6	
256	South Wheal Josiah (copper), Calstock	2	6	
900	St. Minver Consols (silver-lead)	1	6	
128	Takenbury (copper), St. Ives, Liskeard	8 1/2	8	
2048	Trebell Consols (tin and copper), Lanivet	14 1/2	1 1/2	1 1/2
512	Treburget United (lead), St. Teath	1		
5000	Tregear Consols (antimony & silver-lead)	1		
256	Tregordon (silver-lead) Wadebridge	10	7 1/2	9 10
256	Trehane (silver-lead), Menheniot	14	15	
512	Trethvey (copper), St. Cleer	7	5	
512	Treville (lead), Lewannick	1 1/2	6 1/2	
6000	Wargrave Consols (copper)	20	102 1/2	105
256	West Caradon (copper), Liskeard	20	60	
512	West Fowey Cons. (tin & cop.), St. Blazey	40	60	
1024	West Par Consols (copper), St. Blazey	10	11	
2500	West Polgoth (tin), St. Ewe & St. Mewan	5	3	
300	Wheal Arthur (lead), near East Wh. Rose	17	49	
2048	Wheal Arthur (copper), Calstock	1	1	
1024	Wheal Bray (copper), Altonham	11 1/2		
232 1/2	Wheal Calstock (copper), Calstock	9	9	
1000	Wheal Gorse (silver-lead, copper, &c.)	4	5 1/2	
1000	Wheal Gorse (tin), St. Columb Major	5	5 1/2	
256	Wheal Kingston (copper and silver-lead)	5	1	
6000	Wheal Langford (copper and silver-lead)	4	1 1/2	2 1/2
1024	Wheal Mary (silver-lead and copper)	1 1/2	60 1/2	67 1/2
512	Wheal Mary Ann (lead), Menheniot	5	60 1/2	67 1/2
3000	Wheal Penhale (lead and copper)	2 1/2	6	
128	Wheal Pollard (copper), St. Cleer	15 1/2		
1056	Wheal Sarah (silver-lead), St. Kew	6		
512	Wheal Sophia (silver-lead), Lezant	7	7	
512	Wheal Spry (copper and lead), St. Columb	4	8	
1100	Wheal Trelawny (tin), Lanivet, Bodmin	7	8	
256	Wheal Trelawny (silver-lead), Liskeard	3 1/2	49 50 51	50 51 52
512	Wheal Tremaine (copper), St. Ervan	11	3 1/2	
1024	Wheal Vinton (silver-lead), Liskeard	3 1/2	10	9 1/2
910	Wheal Vincent (tin), Altonham	7 1/2		8
128	Wheal Violet (tin and cop.), St. Stephens	5	5 1/2	5 1/2
184	Wheal Vyvyan (cop. & tin), Constantine	60	60	

ST. AGNES, NEWLYN, AND PENZANCE DISTRICT.

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
107	Budnick Consols (tin), Penzance	52 1/2	10 1/2	
128	East Tynwath (copper), St. Agnes	8	8	
512	East Wheal Leisure (copper)	5	29 1/2	21
128	East Wheal Rose (silver-lead), Newlyn	80	600	650
262	North Wheal Leisure, Penzance	1 1/2	1 1/2	
1160	Perran St. George (copper and tin)	21 1/2	45	
1000	Polberro (tin), St. Agnes	15		
256	Garras (lead), near Truro	43	23	
500	Tywarnhaile (cop.), Illogan & St. Agnes	60	47 1/2	
2048	West Wheal Rose (lead), Newlyn	24	3	
100	Wheal Friendly (tin), St. Agnes	70	65	
4000	Wheal Golden (lead), Penzance	2	5 1/2	
216	Wheal Henry (copper), Kea, near Truro	25	8 1/2	
128	Wheal Vlow, Penzance	3	5	

GWENAP DISTRICT.

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
1056	Carvannall (copper), Gwenap	25	8	
128	Comfort (copper), Gwenap	55	100 105	70
96	Great Consols (copper), Gwenap	1000	250	
282	Lanarth Consols (copper), Gwenap	10	6	10
96	Treavean (copper), Gwenap	10	2 1/2	
120	Trethellan (copper), Gwenap	10	18	
120	Trevelyan and Barriar (copper)	130	275	266
200	United Mines (copper), Gwenap	300	130	110
120	West Trethellan (copper), Gwenap	15	20	
3725	West Wheal Jewel (tin and copper)	12	2	
512	Wheal Trefusis (copper), Gwenap	6 1/2	20	19 20

REDRUTH DISTRICT.

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
1024	East Buller (copper), near Redruth	2	7	6 1/2 7 1/2
128	East Carn Brea (copper), Redruth	4	3	
256	East Soton and Wheal Maude, Redruth	4	4 1/2	
256	East Tolgus (copper), Redruth	4	20	20 1/2
256	Graham and St. Anby (copper)	80	37 1/2	40 45 50
1024	North Buller (copper), Redruth	4	14	14 15
1200	North Wh. Buller, or St. South Tolgus	5	7	
256	North Trefusis (tin and copper), Redruth	1	2 1/2	
256	North Tolgus (copper), Redruth	7	20	20
256	South Tolgus (copper), Redruth	16	155	
9000	Trevelyan Consols (copper), Redruth	6	2 1/2	3 3 1/2
128	West Buller (copper), Redruth	10	750	
3000	Wheal Trefusis (copper), Redruth	10		10
1024	Wheal Elizabeth (copper), Redruth	19	52 1/2	

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
990	Wheal Mary (copper), Redruth	14 1/2	7 1/2	
128	Wheal Plenty (copper), Redruth	19	38 39	
126	Wheal Union (copper), Redruth	40	27 1/2	45 50
512	Wheal Selena (copper), Redruth	1	1 1/2	
1024	Wheal Ury (tin and copper)	2	5 1/2	

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
1000	Carn Brea (copper and tin), Illogan	15	120	115
2560	Cook's Kitchen (copper and tin), Illogan	15 1/2	10 1/2	9 10
128	East Pool (tin and copper), Pool, Illogan	24 1/2	153	155
94	East Wheal Croft (copper), Illogan	12 1/2	250	150
256	East Wheal Frances (copper), Illogan	2 1/2		
6000	North Wheal Bassett (copper and tin)	—	15 20	10 15
100	North Pool (copper and tin), Pool	45	420	
—	Polgare (copper and tin)	1	4	4 1/2
2000	South Carn Brea (copper), Illogan	10		
1190	South Dolcoath (copper), Illogan	6		
256	South Wheal Bassett (copper), Illogan	10 1/2	325 30 50	330
256	South Wheal Frances (copper), Illogan	7 1/2	630	650
6000	Tincoff (copper and tin), near Pool	7	11 1/2	12
940	West Tolgus (copper), Illogan	13 1/2	7 1/2	7 1/2
512	West Wheal Frances (copper), Illogan	7	14 1/2	20 21
500	West Wheal Towan (copper), Illogan	15	12 1/2	
1000	Wheal Agar (copper), Illogan	6	5 1/2	5 1/2

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
1000	Camborne Consols (copper), Camborne	7	7 1/2	
256	Condurow (copper and tin), Camborne	20	112	116
1000	Copper Bilton (copper), Crowan	10 1/2	4	
180	Cranes & Bellows (copper), Camborne	7 1/2	8 1/2	21
1024	Dolcoath (copper and tin), Camborne	252	18 20	
1026	Gustavus Mines (copper), Camborne	5 1/2	6	6 1/2
320	Nansogollan (tin and copper), Camborne	1	3	
140	North Boscar (copper), Camborne	10	160	
1026	Pendarves Consols (copper), Camborne	3	6 1/2	
1000	Pendarves and St. Aubyn (copper)	5	12	6 1/2 7
1000	Stray Park and Camborne Vein (copper)	15	20 20 1/2	20 22 1/2
1200	Tolcarne (tin and copper), Camborne	8	5	
200	West Soton (copper), Camborne	65	170	
2560	Wheal Harriet (copper), Camborne	1	5 1/2	4 1/2 5
128	Wheal Soton (tin and copper), Camborne	107	230	240
267	Wheal Tryphena (tin and copper)	40	40	

Shares.	DEVELOPMENT.	Paid.	Last Price.	Transactions.
5120	Alfred Consols (copper), Hayle	3	18 18 1/2	17 1/2 18
1924	Ballegarden (tin), St. Just	9	10 1/2	
940	Balloon Consols (tin), Uny Lelant	—	4 1/2	
40	Bolowall and Nanpan (tin), St. Just	—	16	
128	Boscan (tin), St. Just	10	20	
60	Boscon (tin), St. Just	5	6	
100	Botallack (tin and copper), St. Just	182	200	150
1000	Carbona (tin and copper), Crowan	5	10	
1024	East Ballegarden (tin), Saccree	13 1/2	13 1/2	2
1024	East Ballegarden (copper), Crowan	13 1/2	13 1/2	
2500	Georgina Consols (tin), St. Ives	2 1/2	7 1/2	
512	Great Wheal Badern (tin and silver-lead)	20	80 100	
512	Hawke's Point (copper), Uny Lelant	7	7	6 1/2
256	Lelant Consols (tin), Uny Lelant	53	18	21 1/2 25
160	Levant (copper and tin), St. Just	—	175	180
1000	Lewis (tin and copper), St. Erth	17	18 21	18 1/2